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ABSTRACT

This paper addresses itself to the question of why the English language should have levelled almost all of its inflections, and what the relationship is between the breakdown of the case system and the rise of fixed word-order, prepositional phrases, and verb periphrases. The explanation proposed for the phenomenon of syntactic drift is considered superior to the traditional explanation of the erosive effect of phonological change, and to the postulation of a metacondition responsible for the proliferation of free-standing segments rather than bound morphemes. First of all it is shown that Old English and Modern English are structurally more similar than has traditionally been assumed, that changes evident in Modern English can be traced from the earliest documentations of Old English. It is further shown that the answer cannot be found within the history of English, but rather, that the independent but parallel developments which take place in related languages are due to the structural features of the protolanguage, in this case, the Indo-European protolanguage. Finally it is shown that, while word-order change is not the sole cause of syntactic changes, it can be called upon to relate many diachronic developments which have until now defied explanation. (Author/AM)

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A Demystification of Syntactic Drift[1]

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It is commonly assumed that English has evolved from a language dependent for its grammatical marking upon inflections, to one which makes use of fixed word-order and 'function words' (prepositions, auxiliaries) instead. It is commonly assumed that the language has undergone a 'drift' from 'syntheticity' to 'analyticity'. This assumption is based on the observation that Old English (OE) nouns and pronouns mark four or five cases, three genders, sometimes three numbers, and OE verbs mark three persons and two moods; while Modern English (NE) has only one productive case marker (-s) and number marker (-s) for nouns, one person and number marker (-s) for verbs, and its word-order is 'less free' than that of OE. The question to which I address myself initially is why the English language should have levelled almost all its inflections, and what the relationship is between the breakdown of the case-system and the rise of fixed word-order, prepositional phrases (PP) and verb periphrases. It will be seen that the answer cannot be found within the history of English.

In 1921, Sapir applied the name 'drifts' to the levelling of the subject/object distinction, the fixing of word-order and the rise of the invariable word in English. The drift of a language, he said, was "constituted by the unconscious selection on the part of its speakers of those individual variations that are cumulative in some special direction" (p.155). He observed that changes to come were "in a sense prefigured in certain obscure tendencies of the present" (p.155), and he was unable to interrelate his three drifts, except by hinting that it was the 'nibbling away' of the inflections by phonetic processes that necessitated the takeover of their functions by fixed word-order (p.164,166). The erosive effect of phonological change is indeed the traditional explanation for the 'dramatic' change of structure in English - the fixing of a heavy stress accent on the initial syllable in Proto-Germanic is often held responsible - and this view is explicit not only in older accounts, such as Kellner's (1892; cf. p.17) and Wyld's (revised 1927; cf. p.19), but also in recent and even forthcoming works (Pyles 1964, cf. p.152; Vennemann (forthcoming)). There is abundant counter-evidence to this view in the study of English, however, although the causes of the drift are not exposed there. It will first become apparent that OE was much more similar structurally to NE than is traditionally assumed, and that the

'revolution' which supposedly overturned the old order at the end of the OE period (McLaughlin (1970), for example, writes that the lines of grammatical development were established in Middle English (ME)), was merely a speeding-up of changes which were already clearly in progress since the earliest attestations of the language. The direction that English was to follow was apparently determined by the word-order of the Indo-European (IE) proto-language.

OE is not as synthetic as most grammars would have it. The inflectional system showed signs of weakness from the earliest records on. Because of the especially large number (ten) of noun declension paradigms, it was in the nominal system rather than the verbal (which had been considerably simplified in Proto-Germanic) that the breakdown of inflections was first apparent. Jespersen (1948) holds that the 'inconsistency' of the flexional system is the principal cause of its simplification (VII:177), but this inconsistency seems rather to resemble a fault in the substance of the grammar, where pressure from a specific source manifests itself first. The inconsistency is of two types, that of the case-assignment rules and that of the case-marking system itself.

The case of an OE noun is determined not exclusively by its function in the sentence, but by a number of factors. It may be governed by a preposition which has the same function as the case inflection (e.g. the instrumental preposition mid), by a preposition which has a different function (e.g. andlang 'along' + genitive), by a verb (e.g. belēosan 'lose' + dative object), or by its function alone (e.g. a partitive genitive). The dative and accusative cases are the first to fall together: the dative supplants the accusative in the non-neuter personal pronouns (mec, þec, hine are replaced by mē, þē, him), while the accusative supplants the dative in the neuter (personal and demonstrative) pronouns (him, þaem are replaced by hit, þaet). Certain of these changes clearly owe nothing to phonetic reduction, and the dative and accusative cases merge in the pronouns before they merge in the noun suffixes. By the time of this latter confusion, the ambiguity of use is combined with the ambiguity of the inflections themselves.

Few OE endings consistently express the same function, and practically no function is consistently represented by one ending, even in the earliest texts. The only ending common to every noun in the same case is the dative-instrumental plural -un; by around 1000 A.D., when Beowulf is written down, it is occasionally spelled -an, as is the preterite plural ending -on, while the infinitive ending -an is sometimes spelled -on. These fluctuations in spelling indicate that the vowels have been levelled to [ə], centuries before the onset of the ME period. But the inflectional system is becoming redundant even in early OE. An overtly-marked subject/object distinc-

tion, surely indispensable to any 'synthetic' language, whose word-order is characteristically 'free', is absent in both the singular and plural of the very common a-declension nouns (which absorb nouns from other declensions throughout the OE period), and it is marked by the determiner only in the masculine singular. The numerous n-stems (or weak declension) and the feminine o-declension are even less clear, since not only are the nominative and accusative forms indistinguishable in the plural, but the oblique case markings are all identical in the singular (-an in the n-stems and -e in the o-declension). In practice, the subject/object distinction is absent in the plural of every noun declension - in fact, since written OE is very conservative, one can assume that the spoken forms are even less distinctive morphologically than the attestations from which we construct the system.

With natural gender already supplanting grammatical gender in some cases (e.g. the neuter maegden 'girl' and the masculine wīf-mann 'woman' are sometimes pronominalized as feminine with heo), it is evident that the case and gender assignment rules are losing the motivation that they must have possessed before the OE period, perhaps in Proto-Germanic. Perhaps the inflectional ending was at one time predictable from the phonetic or syntactic environment, just as ablaut in the strong verbs seems to be a reflex of the two accent types in Proto-Indo-European (PIE) (Prokosch, p.120), and is subsequently used to distinguish morphological categories - tenses in Germanic, types of derivatives in Sanskrit; and umlaut, originally assimilation to a following high vowel, is generalized as a plural marker in German. By the end of the OE period, children are apparently unable to recover any motivation for the correlation between noun groupings and suffix types; ME nouns eventually take no more than two endings, -e in the dative singular (final schwa is to disappear from all words in the thirteenth century in the North) and -es, which is extended to all plurals and all possessive forms.

The inability of the OE inflectional system to distinguish cases consistently suggests that we must look elsewhere in the grammar for the carrier(s) of the 'functional load'.

Function words - unstressed subject pronouns, articles, prepositions, auxiliaries, modals - are characteristically absent from 'synthetic' languages; early Sanskrit makes use only of prepositions, and very few of these. Function words are well-represented in OE, however. Definite and indefinite articles are to be found in the oldest documents, although the latter are rare. Prepositions are common at all periods; sometimes they are obligatory (as in the case of the agent in a passive construction, which requires fram, of or by), sometimes merely usual (the instrumental case is accompanied by mid as early as 750). Since of still carries the meaning 'from',

it is not yet common as a marker of the possessor, but the partitive genitive is sometimes replaced by a PP, and instances of of-periphrases are to be found in the tenth century in the Anglo-Saxon Chronicle, the Lindisfarne Gospels and the writings of Aelfric. A periphrasis with to occasionally replaces the dative alone at this time (e.g. þaes þe aēr dyde tō Sarran 'that which (she) earlier did to Sarah', Caedmon).

The verbal system of OE is no longer the simple two-tense, one-voice one of Proto-Germanic (PGmc). From the beginning of the period is attested the periphrasis with have or be in the present or preterite to express the perfective aspect. A progressive periphrasis is introduced with be in the present or preterite and the present participle (wāēron feohtende 'they were fighting'). Temporal as well as aspectual auxiliaries develop: a future with will (+ volition, intent) or shall (+ obligation) and the infinitive becomes well-established. The passive is expressed by beon, wesan or weorðan and the past participle. Inflections of the subjunctive mood are blurred in OE, and periphrastic subjunctives are common, especially in the preterite (where the subjunctive suffixes are being neutralized as [ə] as early as the tenth century). Modal use of magan and motan is found in the earliest texts; Bede (in the early tenth century) often uses sceolde and the infinitive instead of the preterite subjunctive. This replacement of synthetic forms by analytic constructions leads to the establishment of the new category of Modal in the fifteenth and sixteenth centuries, which is characterized by such features as its inversion with the subject NP in interrogatives, a feature which is restricted to the category of Aux in ME. The category of Aux is clearly represented by surface segments in the earliest OE.

Although OE makes considerable use of function words - indeed, the modern range of uses is clearly established at this time - they are but complementary to the veritable structure marker of the language. Almost all except the most recent histories of English consider word-order, if they consider it at all, to be nothing more than a stylistic device of OE. Fries writes in 1940 that "the order of...words...has no bearing whatever upon the grammatical relationships involved...word-order is non-distinctive and connotative" (on his first page). But it has been recognized within the past few years that word-order is the prime signal of function in OE, as it is in NE. Traugott states this in 1969 (p.6),[2] and Strang in 1970 (p.345), and Gardner writes a thesis to prove this point in 1971.

Word-order within the NP has been constant throughout the history of English: quantifier - definite article or possessive pronoun - numeral - adjective - noun (all these (or his) three good old

black hens). This fixed word-order allows the demonstratives and adjectives to be reduced from complex sets of forms agreeing with their head in case, number and gender, to invariable forms. In view of this, it cannot be argued that word-order is fixed in order to compensate for the erosion of the inflectional endings.

Order within the VP, however, is not as rigidly prescribed.[3] The MV and the Aux do not always appear in the same order; nor do the object and the verb. Fries, in trying to show that word-order is incidental in OE, reports that half of objects precede the verb in 1000 A.D., and half follow (his p.2). He does not take into account the fact that verb-position often characterizes certain clause types. In fact, there are three basic word-orders in OE: SOV, VSO and SVO. The first two are inherited from PGmc as unmarked and marked orders, respectively; they exist side by side with the innovated SVO order. Verb-initial order characterizes the interrogative and imperative clause types, as well as justifying or intensifying clauses (cf. NE like it you may not, but...). The old verb-final order is preferred in subordinate and coordinate clauses; one study (Smith) has it occurring in 65% of relative clauses (with the relative particle þe) and complement clauses, while 53% of SOV clauses are subordinate, and the rest begin with coordinate conjunctions. In addition to the clause type distinction, one ought to keep in mind the distinction between poetry and prose, if one is to determine the value of the many statistics that have been published in support of various positions on OE word-order. The word-order of English in 1000 A.D. cannot be taken to be that of the poems Maldon and Beowulf, for example, which are written down at that time. The language of poetry is especially conservative, and often retains SOV order in independent clauses. One study (Fun[illegible]) indicates that 40% of independent clauses are verb-final in Beowulf while only 12% are verb-final in Aelfric's prose, which is contemporary with it.

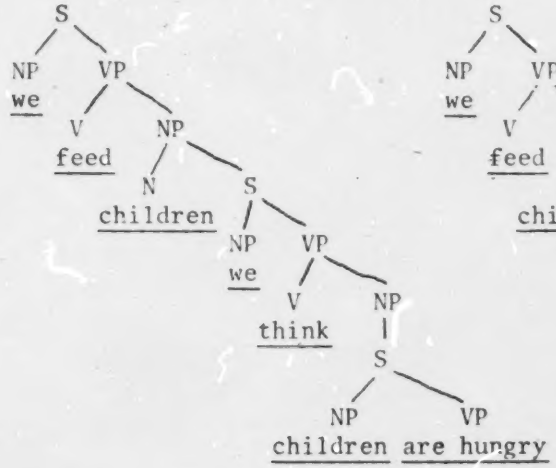
The order SVO, then, is unmarked early on in independent clauses. Inversion of subject and verb decreases in frequency in declarative clauses throughout the OE period, again less noticeably in poetry than in prose (the tenth century poem Maldon inverts more frequently than Aelfric's prose). Some have invoked the principle of 'weight', supposedly an innovation of OE, to account for the rise of SVO order in English. The distinction between light and heavy elements, it seems, is originally phonological, but it is subsequently associated with 'form-class membership'. According to this principle, light elements (be, auxiliaries, unstressed pronouns) tend to be ordered toward the beginning of the sentence, sometimes even preceding the subject. One can apparently distinguish between a verb with full lexical meaning and a new auxiliary by this principle (Strang, p.347); the increasingly frequent auxiliary avoids sentence-final position. Strang gives the normal word-order of late tenth century English as this: optional 'pre-head' (unstressed function word) - subject -

verb - light function words stressed only in contrastive conditions (e.g. personal pronouns) - medium function words which are commonly stressed (e.g. adverbs) - non-finite verb - heavy, simple or compound non-verbal full-words and endocentric phrases (i.e. phrases which have the same function as the one of their elements which is modified by the others: 'the little garden') - exocentric phrases (e.g. 'in the little garden') - dependent clause - independent clause (p.313). The elements following the verb are ordered in terms of progressive weight. According to Traugott (1972), 'split coordinates' such as Christ slept and his apostles are favoured in OE because "complex sentence elements [are] ordered, within specific limitations, according to their length and functional load rather than according to their syntactic groupings: the longer and more complex the construction, the more likely it [is] to be split and part put at the end of the sentence... From ME on, ordering is based chiefly on syntactic groupings..." (p.97). Gordon (1966) suggests that SVO order is established with pronouns as well as nouns, because the pronoun develops accusative forms with the full phonetic weight of monosyllabic nouns; OE hie, for example, which is used for 'she', 'her', 'they' and 'them', is light, while the newer her and them, along with the emphatic him and it and the older me, thee and you, are heavy, and are therefore suitable for post-verbal position. It will be seen, however, that imputing a causative role to the principle of weight is misled; other factors are at work in the determination of word-order.

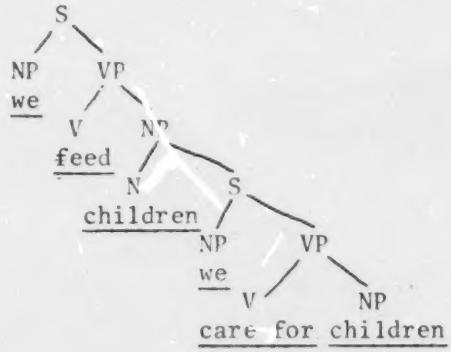
It is the rising predominance of SVO order in OE that makes the breakdown of the inflectional system possible. The predominance of this order can explain a great variety of other historical developments as well. It is responsible for Bever and Langendoen's 'perceptual strategies' in English (1971): a string consisting of a nominal phrase and a finite verb which agree in number is perceived as the beginning of a sentence, and the verb phrase (optionally including a nominal) is perceived as the end of a sentence (p.45). Bever and Langendoen claim that as noun declensions are levelled, these two strategies determine more and more false segmentations of NV as subject — verb, and it becomes obligatory to introduce a relative clause marker on non-initial nouns that are subject of relative clauses. Thus Chaucer's he sent after a cherl was in the toun becomes ungrammatical; the string cherl - was is perceptually misleading. Kuno (1974) points out that the relative pronoun can be deleted in English only when the subject of the relative clause is clause-initial: *this is the problem Ø unfortunately no one paid any attention to.

The perception of the preverbal NP as subject of the verb may also contribute to the disappearance of the objective pronoun whom.

In ME, who often occurs in interrogatives instead of whom, i.e. immediately before the verb; as a relative the tendency is not as strong (man whom I saw). It is curious, in fact, that one of the last refuges of whom is with multiple embeddings of the type we feed children whom we think are hungry (cf. Jespersen III:10.7, VI:6.5$_6$), where children is not even the object of any embedded verb:



We feed children whom we think are hungry.



We feed children who we care for.

Apparently, then, when an NP is followed by another NP which is subject of a multiply-embedded clause, the first NP is taken as object of the embeddings. This is perhaps a case of hypercorrection, although such constructions are found as early as Chaucer (yet wol we us avyse Whom that we wol [that, depending on the manuscript] shal ben our justise (Jespersen, III:10.7$_3$)), where there are no certain attestations of who being used for whom.

The apparent attestations of who for whom in Chaucer and the Ancren Riwle (c. 1225) are possibly examples of another phenomenon instead: the new personal use of impersonal verbs (e.g. and who-so liste it here). But this development is also closely related to the rise of SVO order. Impersonal verbs are common in OE, and are responsible for most of the sentences which lack overt subjects. The verb is always third person singular, and accompanied by an animate dative or accusative, which usually precedes it, especially if a pronoun (a pronominal complement never follows an impersonal). When the dative/accusative distinction is no longer clearly marked in nouns, and adjectives and determiners no longer indicate case at all, this preverbal complement is redefined as subjective, because of the dominance of the SVO pattern. Pronouns, which often retain archaic characteristics,[4] still reflect a subject/object

distinction in NE, and they keep alive the impersonal construction until the early NE period (cf. methinks, which is in OE me þynceð 'it seems to me'; and woe is me). Alternate constructions with it are found in the earliest OE documents (hit līcode him 'it pleased him'), indicating that there is already some pressure to fill the subject slot before the verb (subject slot-filling is well-advanced by the fourteenth century). However the complement is usually interpreted as subject, so that we like it survives Shakespeare's it likes us well (Hamlet).

The changeover of impersonal to personal verbs is also closely related to the changeover of intransitive to transitive, which takes place throughout the history of English. In PGmc, a causative infix -ja- on the singular preterite verb stem transforms the verb from strong to weak, and from intransitive to transitive: falljan > fell, satjan > set. The distinction between causative and intransitive is already blurred in OE: one finds flēon 'flee' used to mean 'put to flight', and nearwian 'be narrow' used to mean 'make narrow'. The confusion increases in ME, when many verbs are used indiscriminately as intransitive, reflexive or causative, so that by the time of Shakespeare, die can be used for 'kill', learn for 'teach', fall for 'let fall'. This tendency is reinforced by the loss of the verbal prefix ge-, which distinguishes many OE transitive and intransitive verbs, and the loss of the dative/accusative distinction, which distinguishes direct from indirect objects. It becomes unclear whether answer (as in answer me!) is a transitive or an intransitive verb, so that as early as Aelfric, one finds such a verb in the passive: ic eom forgifen 'I am allowed'. Such constructions are presumably not uncommon in spoken OE, and are well-established in the written language by the early thirteenth century (e.g. ure Lauerd beo iþonked 'our Lord be thanked' (Ancren Riwle), and I fand Jesus bowndene, scourgede, gyffene galle to drynke (Hampole, 1370)).

Just as preverbal NPs are interpreted as subjective, postverbal NPs are interpreted as objective. The construction is hit eom 'I it am' is usual in OE; by the fourteenth century it am I is alternating with it is I; and by the end of the sixteenth century, the alternation is between it is I and it is me (the latter is found three times in Shakespeare, two of which are vulgar uses). The objective form wins out in the end. Occurrences are found even of hens must vs fle (in the fifteenth century Towneley Plays) and where shall's lay him? (Shakespeare), where inversion of the subject and verb allows for the subject to be in the objective case (shall's is perhaps confused with let's). Sapir observes that the functional subject/object distinction in English is superceded by a strictly positional distinction in respect to the verb, just as my and mine, originally distinguished in ME on purely phonetic grounds (word-final

n drops before the consonant of the following word), are now prenominal and postnominal forms of the possessive (my father:father mine; it is my book:the book is mine) (p.167). Jespersen also considers that the subject/object distinction in pronouns is one of position, and he acknowledges the importance of the role of word-order in bringing about shiftings of the original relation between the two cases (VII:6.4$_5$), whereas Sapir suggests that position gradually took over functions originally foreign to it, as syntactic relations were more and more inadequately expressed by inflections (p.166).

Historians of English generally account for such developments as these by isolating a number of different factors, with more or less ingenuity. Many take care to point out that no one factor can be held responsible for any change. Sapir, for example, assembles four reasons for the disappearance of whom: first, it does not belong to the set of personal pronouns, which alone mark a subject/object distinction, but to the set of interrogative and relative pronouns; second, interrogative pronouns and adverbs tend to be invariable in English, since they are emphatic; third, an objective pronoun rarely occurs in sentence-initial position (*him I saw); and fourth, [hu:m] is clumsy before the alveolar stops of do and did. Sapir observes that the value of each tendency is variable, depending on the individual and the locution, and that the linguist can never be certain that he has isolated all the determinants of any drift. Jespersen attributes the personal use of impersonal verbs to three causes: the greater interest taken in persons than in things, the identity in form of the nominative and oblique cases in nouns, and the impossibility of distinguishing the cases in certain constructions (e.g. Chaucer that made me to mete) (III:11.2). Such an approach is not confined to antediluvian writers. Stevick (1968) is quite imaginative in his selection of contributing factors. He explains the use of me in it is me, for example, as follows. It is not by analogy with non-copula constructions like it hurts me, that it is I develops into it is me, because in the former the verb is prominent (accentuated) and in the latter the personal pronoun is prominent. Simultaneous with this development, however, is the growth of a new syntactic pattern it is me you saw, where the absence of a relative pronominal form as object of the embedded verb forces the pronoun antecedent into the objective case. Secondly, pronoun subjects are commonly lightly stressed, unless they are emphatic, while object pronouns are often prominent and clause-final, and are therefore associated with emphasis which is not necessarily the result of contrastive conditions. Consequently, the case forms of pronouns are selected not only by syntactic rules, but also by the requirements of relative stress. Thus the stressed form me is selected in the sentence pattern it is --- (p.301). Strang's account of the rise of SVO order in OE is extremely complex. The subject's

being clause-initial in the eighth century is but a contingent fact of ordering, secondary to the primary nucleus object - verb; the innovation of the principle of weight and the new alternative ordering creates an unstable situation, with the verb sometimes preceding the nominals. It is now the position of the verb which is contingent in second position. This too is unstable, since verb-second position is in competition with the identification of verb-position with clause type. She acknowledges that she is not offering a full explanation of why the movement should follow these lines, and observes that the sweeping changes in positional syntax of the eighth to the tenth centuries affect all dialects in exactly the same way (p.349), but she attributes the transition partly to "factors we may regard as accidental and evolutionary: that is to say, a pattern might come to predominate through a series of coincidences" and partly to the breakdown of the subject/object morphology (p.312). McLaughlin states that there are many contributing factors, both linguistic and cultural, to account for the gradual loss of the gender and case distinctions in English and the use of other devices to signal relationships among nouns. He has the Germanic shift of accent to the initial syllable partly responsible for the collapse of the case system in the Germanic languages generally, and cites the cultural milieu of the Germanic tribes in Britain, their contact with non-Germanic-speaking peoples, and especially the effects of the Scandinavian and Norman invasions, to explain why English should have accomplished the change so much more dramatically than the cognate languages.

The factors which the above writers and many others put forward to explain why a certain change comes about, can explain at best only why the change comes about at the time it does, rather than at another. These are changes which will take place because of the structural makeup of the language, and they are merely retarded or accelerated by such factors. To speak as Strang does of 'series of coincidences' and 'accidental and evolutionary factors' is to ignore the relationship between these changes and the changes in related languages. How can SVO replace SOV as the primary unmarked order in OE 'accidentally', when a parallel development occurs more or less simultaneously in the Scandinavian runes, Old Icelandic, Old High German (OHG) and Old Saxon? What is more, SVO order similarly replaces SOV in Vulgar Latin, so that all the Romance languages share this new order - and Albanian, Modern Greek, Lithuanian and the Slavonic languages have all evolved from SOV languages to SVO.

R. Lakoff, in her examination of drift (1972), does not ignore the fact that parallel developments are taking place in the languages of the Indo-European family. She claims to be able to relate Sapir's three drifts for English - the levelling of the subject/object morphology, the fixing of word-order and the rise of the invariable word - and to subsume them under the larger drift which characterizes

the entire Indo-European group. She postulates a 'metacondition' for the purpose, which is neither a universal condition on the form of grammars, nor a part of any synchronic grammar. It cannot be stated formally, and it cannot be learned by the speaker, but it is responsible for the preference of the IE languages for independent segments in surface structure, rather than bound forms (inflections). According to her, there is a reasonable amount of evidence that case and verb endings were originally independent elements themselves, so that her metacondition must have arisen in the language at a certain point in time. The conclusion is that, as mysterious as the metacondition is, it must exist if we are not to attribute the parallel developments of the IE languages to coincidence.

It is curious that Lakoff should have reserved for a footnote (no. 16) the suggestion that motivation for these changes can begin to be seen, if the possibility is considered that they are ultimately due to a shift from underlying SOV to SVO order. For in her analysis she tackles the the resemblances among the IE languages head on, unlike the historians of English above, but she fails to take into account the interrelationship of such changes within any one language.

Through the examination of thirty diverse languages of the world, Greenberg (1963) has revealed that there are surprising correlations between the word-order of a language and other of its properties. Six of the languages investigated have VSO as primary unmarked order; all have prepositions rather than postpositions, the adjective and the genitive follow the noun, the main verb follows the auxiliary, the comparative construction is ordered adjective - marker - standard (e.g. sweeter than ghee), and SVO is always an alternative order. Eleven languages of the thirty are SOV, and they all have postpositions rather than prepositions, the auxiliary follows the main verb and the comparative construction is ordered standard - marker - adjective (e.g. Vedic ghṛtā́t svā́dīyaḥ 'sweeter than ghee'). In most of the SOV languages, the adjective, demonstrative and numeral precede the noun; if the genitive follows the noun, then the adjective does as well. SOV languages tend to be suffixing rather than prefixing, while VSO and SVO tend to use both processes. SVO languages, which Greenberg finds to make up thirteen of his thirty, share many features with VSO: most are prepositional; in most, the adjective follows the noun. In general, then, the modifier tends to precede its head in a VO language, and to follow it in an OV language. A universal of Greenberg's which is of particular interest in this study is No. 41: "If in a language, the verb follows both the nominal subject and nominal object as the dominant order [SOV], the language almost always has a case system".

We can now conceive of a valid explanation for the breakdown

of the case system, the fixing of word-order and the increasing use of function words in English, and account for similar developments in related languages.

Study of the Germanic family of languages reveals that English (along with, perhaps, Danish) has proceeded farthest in the direction that all are heading in. The developments which distinguish the PGmc language from its PIE ancestor already anticipate those which characterize the derivative languages. A considerable amount of inflectional simplification accompanies the shift of accent from the freely-placed PIE one of pitch, to the initial Germanic one of intensity. The PIE pitch accent apparently affects vowel quality rather than vowel quantity, whereas the Germanic stress accent contributes to the shortening and loss of sounds (Bennett 1972). The noun morphology is conservative: the three genders are retained and the case inflection of Germanic in the fourth century A.D. is as rich as that of Homeric Greek. The nouns retain the athematic type of PIE inflection (the type ending in -n- acquires great importance and gives rise to the weak inflection of nouns), but the thematic type (represented by stems ending in a vowel, e or o) is better represented. The stem is distinct from the ending in the athematic type of inflection (e.g. Sanskrit dánt-am (acc. sg.), dat-aḥ (gen. sg.); Greek (o)dónt-a, (o)dónt-os; Latin dent-em, dent-is; PGmc *tanþ-u(n), *tunþ-iz; 'tooth' in each case). But the endings are often fused in the thematic type, so that PGmc *armaz (nom. sg.), *arma(n) (acc. sg.) tend to be cut *arm-az, *arm-a(n), and the ending of an athematic noun like Gothic fotu 'foot' is subject to levelling as if it were part of the inflectional suffixes rather than preceding them. The stem perhaps stands without suffix already in PGmc in the nominative and accusative cases.

The verb system of PIE is reduced in PGmc to a two-tense one-voice system without aspect marking. The perfect and aorist forms are collapsed into a new preterite; the subjunctive and optative are collapsed into one mood. The verbs are divided into a class of strong, based on the PIE e/o ablaut, and a class of weak (a PGmc innovation), making use of a dental suffix in the preterite and past participle, and originally formed from strong verbs or other categories. The Germanic languages all preserve vowel mutation as a marker of tense today, although there has been a constant shift from strong to weak in each language (German schmerzen 'hurt (intrans.)', bellen 'bark', fluchen 'curse' were formerly strong; similarly with English chew, help, laugh and Norwegian svømme 'swim', lese 'read').

As to the word-order of PGmc, there is no consensus. Fourquet (1938) holds that it is free, somehow determined by the real world of objects and events, and the individual's intention in commenting

on them, and points to Gothic texts and Beowulf as evidence of this (from Smith, p. 5). Meillet (1917) also considers that PGmc word-order is flexible and has no grammatical value (p.100). Lockwood (1968), on the other hand, suggests that the finite verb is commonest in second position in PGmc, in accordance with the 'immemorial tradition' of German (p.258). He allows for the possibility that verb-final order is introduced because of the influence of Latin (p.260). Delbrueck, however, holds that the verb is usually final in PGmc, and that it subsequently advances to second position in independent clauses, remaining at the end in subordinate (from Huchon, p.253; Smith, p. 2). Indeed, Smith (1971) offers ample evidence that Delbrueck is right.

In the oldest runic inscriptions and in Gothic, verb-final order is unmarked in both dependent and independent (indicative) clauses (62% of all sentences are verb-final in the runes of Smith's corpus). But it seems that the Germanic dialects undergo a radical change of ordering around 600 A.D.: the Scandinavian runes (the runes now show dialectal variation) apparently now use SOV order in main clauses only to create a deliberate archaic effect, but normally preserve it in subordinate clauses (which begin with conjunctions; it is only a secondary order in relative and complement clauses). In Old Icelandic, the verb may occur no later in the sentence than third position (where it is usual in subordinate clauses). But in OE, OHG and Old Saxon, verb-final order remains an important alternative pattern, which the continental dialects tend to restrict to, and OE merely to prefer in, subordinate clauses.

Verb-initial order is inherited from PIE as marked (cf. Vedic, Slavic, Hittite, Latin), and is restricted in PGmc to imperative sentences, conjoined clauses (with or without a connecting word), and usages of dramatic or pathetic force, especially in poetry In North and West Germanic, verb-initial order also characterizes interrogative sentences.

Verb-second order, however, is a strong Germanic innovation. It is a secondary alternative order in the earliest runes and Gothic (occurring in 19% of sentences in the runes, and 21% in Gothic), and only in indicative and optative independent clauses as an alternative to SOV order. Around 600 A.D., it becomes overwhelmingly dominant in main cluuses (indicative and optative, relative, complement and interrogative clauses with question-words) in the runes and all Scandinavian dialects (in Old Danish and Old Norwegian, four out of five sentences are verb-second), and it is already the unmarked order by the time the West Germanic dialects are attested, although the preference is less strong than in the North.

Verb-third order figures little in Gothic and the earliest runes,

and only as a result of topicalization with the other elements retaining their order. This is also the case with OHG and Old Saxon, but Old Icelandic uses it customarily in dependent clauses, and OE uses it with equal frequency in dependent and independent clauses (as do the early runes and Gothic), depending on whether the clause begins with a non-subject element, usually a time or place adverbial (here the other dialects tend to invert the subject and the verb). OE already shows a tendency to avoid inversion; it is to restrict it in interrogative sentences to the auxiliary (*See you that?, *What say you?), and the introduction of dummy do contributes to the retention of subject - main verb order ((Do) you see that?).

It is clear, then, that PGmc is in transition from SOV order to SVO. The steady diminishment of SOV characteristics can be traced in each language with the help of Greenberg's findings. There seems to be a tight correlation between the order of constituents dominated by the highest nodes of a phrase marker, and the order of constituents dominated by the lower nodes. Thus there are examples of the SOV type of comparative construction in the Old Norse Edda and in Old Icelandic (hon var hverri konu fríðari 'she was than any other woman more beautiful' (OIcel)), although the predominant type in the Germanic texts is SVO, the marker being a particle or a dative suffix. Relics remain in OHG; for example, dana mēr 'by so much the more' is found alongside the newer mēr dan. OV languages may also express comparison without the use of a comparative sufix on the adjective (cf. Japanese inu wa neku yori takai 'dog cat from big'), and examples of this too are found in Gothic, Old Icelandic and OE (e.g. þaet waes faer mycel...þonne þeos aeðele gewyrd, geara gongum 'that was long-ago much [=more] than this noble event, in the passage of years' (OE)).

The underlying order of elements in the predicate may be reflected in compounds. The old OV type, as in OE manslyht 'manslaughter' is still productive in NE (pot-smoking, party-crashing), but the great majority of new compounds are of the VO type (pickpocket, singsong, do-gooder (cf. older evildoer)). Older verb-final order is reflected in preposition-incorporating nominalizations as well: outcome, intake, upkeep; while the newer formations are in the reverse order: handout, drive-in, mix-up.

The development of adverbs into postpositions and then prepositions is well-attested in the Germanic family. The ablative and locative are apparently among the first cases to collapse; that this occurs in the IE proto-language is indicated by the fact that the prepositions which perform their functions are cognate in most of the IE languages: Germanic up (German auf) is related to Greek hypó, Latin sub and Sanskrit úpa; through (German durch) is related to Sanskrit tiráḥ and Latin trans; out, in, at, on and under are also inherited from PIE. The prepositions which supercede the hardier

dative and genitive cases, however, vary greatly from language to language, even within the Germanic family: German von, English of, Norwegian til, aat, French de, Bulgarian od, all express what is formerly expressed by the genitive case. The original adverbial use of these forms is apparent in the older texts: Homer uses ápo (cognate with of, off) as an adverb meaning 'far away'; néōs ápo baínei 'from-ship away he-goes' develops, with the change of order, into apò neōs baínei. Similarly, in the ninth century, zu is exclusively adverbial in OHG, and examples can be found with the cognate to in OE (þa ēode hē tō 'then walked he there'). In the OE him cenlice wiþ feoht 'him keenly against (he) fought', one may observe not only the transition from adverb to postposition, but also the process whereby such particles become attached to verbs as preverbs: Greek apobaínei 'it results', German zugehen 'to come about', English withstand.[5] Postpositions are attested in the old Germanic dialects, especially in Old Norse (Freslondum on 'in Friesland' (Beowulf)), and they may still be found in poetry (She must lay her conscious head A husband's trusting heart beside (Byron)). The origin of prepositions may also be reflected in such constructions as all the world over, all the way through. These considerations will be of especial interest in respect to the history of German.

The history of attributes and genitives is not so clear. All the modern Germanic languages order qualifying adjectives before their heads, as is characteristic of the OV rather than the VO type. There are indications that the older order is the reverse: Smith gives examples of demonstratives, adjectives, possessive pronouns and title nouns following their heads in the earliest Germanic texts, and in restricted (and therefore archaic, for Smith) usages later on, such as fiddlers three, Snow White, words a-plenty. The order of the genitive is even less clear, as its position is very variable, and only OHG and Old Icelandic order it consistently, the former before its head, and the latter after. The partitive genitive is ordered after the noun in the earliest runes, Gothic, Old Norwegian, Old Icelandic and OE, and before the noun in Old Danish, Old Swedish and Old Saxon. Today the inflected genitive can still occur before or after its head in German and Norwegian, but the other Germanic languages prepose it. It is true, however, that adjective phrases and relative clauses follow the noun in Germanic languages (except German), in accordance with the VO type; and Greenberg's Universal 5 states that if a language has dominant SOV order and the genitive follows the noun, then the adjective also follows the noun - therefore, perhaps the shift of the adjective to postnominal position generally lags behind the shift of the verb to second position, and the shift of the adjective to prenominal position lags behind the shift of the verb to final

position, the genitive making the move before the adjective. In this case, the head - modifier order that is occasionally attested in the early Germanic texts is a relic of a VO order which precedes the OV order in PIE (this is discussed below), and English retains its preposed adjective as an archaic OV characteristic, although it is otherwise a fairly consistent VO language.

It should be observed that the order in compounds and morphologically derived forms can be of only limited value in determining former underlying orders. Givón (1971), Lehmann (1969, 1972) and Miller (1974) rely heavily upon it to demonstrate the direction of change in various languages. Thus Givón claims that evidence of the partitive genitive preceding its head in PGmc can be found in the suffixes -ful and -less, which derive from adjectives: (of) joy full, (of) joy less (cf. German er ist es los 'he is (of) it rid', where es is an old genitive of ez, and los is cognate with less). But this notion is rather simplistic, as we can see from the preceding paragraph, especially when the precise time that such constructions came into the language is not taken into account. Notice that the OV compound formation type is still productive in English (preposition-incorporating nominalization); yet it does not reflect the order in the VP at all. Lehmann (1969) considers that the paucity of dvandva-type compounds (e.g. bittersweet, secretary-treasurer, psycholinguistic) in the early IE dialects is good evidence that coordinating structures are not prominent in PIE (p.5). It will be seen below that this too is an oversimplification.

PGmc, then, is ambivalent in structure, and although the various dialects all show SVO as primary unmarked order in main clauses around 600 A.D., and proceed to innovate articles, auxiliaries, etc., each develops somewhat differently. The relationship between the old verb-final order and the subordinate clause, for example, differs in each. In North Germanic, the two are hardly related at all, while in OHG and Old Saxon, they are closely identified, even in the earliest texts. OE, on the other hand, uses verb-final order in both dependent and independent clauses (although with greater frequency in the former), and only verb-initial order is identified with any clause type. The consolidation in English of SVO order and all the trimmings is unimpeded throughout its history, but the history of German is bizarre.

German has not only retained the ambivalence of structure of PGmc, but it has compounded it. OHG develops unstressed subject pronouns (which are absent in Gothic), a definite article and later an indefinite article. It innovates a periphrastic passive with sein ('be'), and a periphrastic future, although context and a temporal adverb usually suffice. Constructions with scal and willu plus the infinitive are occasionally used to express simple future time, but it is not until late Middle High German (MHG) that the modern future construction with werden ('become') and the infinitive

is established (werden is used in OHG with the present participle as an inceptive). A perfect periphrasis with haben arises in the ninth century, and is used with intransitive verbs by the early eleventh century (ih hān gesundōt 'I have sinned'); that is, the participle is no longer used adjectivally with the object (as in phīgboum habēta sum giflanzōtan 'fig-tree had a-certain-man planted' (c. 830)). The comparative in Gothic is formed with only a dative suffix; OHG innovates the particle danne (OE innovates þonne). OHG and OE in fact undergo strikingly similar development, until English emerges from the Norman occupation with only two endings per noun stem. German retains to this day its four-case, three-gender nominal system, its double adjective declension, its person, number and mood markings on verbs - some modern grammarians of German consider inflection the most important marker of function in the language (e.g. Schmidt (1967): "Die Flexion (Deklination und Konjugation) ist das wichtigste Beziehungsmittel unserer Sprache" (p.78)). However, many developments which are taking place in modern German (NHG) recall those in the history of English. Case, number and gender are no longer marked on the noun, but only on the article. Even in OHG, noun declension is not sufficient to mark these features; -(e)n in the weak masculine declension (Knaben) is seven-way ambiguous, and the nouns Jungen 'boy', Gedankens 'thought' and Tages 'day' are all in the genitive case. Three of the four cases are indistinguishable in all nouns in the plural. Even when determiners and adjectives are present, the nominative and accusative are distinct only in the masculine singular, and the feminine noun never distinguishes dative and genitive.

As in English, the dative/accusative distinction is blurred first in pronouns; in some Low German dialects, the dative supplants the accusative in the first and second persons singular (mi, thi), while in others it is the reverse (mik, dik); in the plural, uns and ïu (both dative) are used in both cases. Later, as in OE, the dative replaces the accusative in the third person as well, in Low German (ihm or em supplants ihn). In NHG, however, the dative/accusative distinction is lost only in the first and second persons plural pronouns (uns, euch). There is also a move from intransitive to transitive verbs: ich werde geholfen 'I am helped' is possible in some dialects of Low German, whereas helfen takes a dative object in NHG; in NHG, fuer jemanden kochen 'for someone cook' is being replaced by jemanden bekochen 'someone (= direct object) be-cook', jemandem raten 'to-someone advise' by jemanden beraten 'someone (= direct object) advise', nach/zu einem Ort reisen 'to a place travel' by einen Ort anreisen 'a place (= direct object) to-travel'. There is also a shift from impersonal to personal use of verbs: mir ahnt, es ahnt mir 'I sense' becomes ich ahne; mir hat getraeumt 'I had a dream' becomes ich habe getraeumt; es verlangt

mich 'I am desirous' becomes ich verlange.

There is a strong tendency in German to replace the genitive and dative cases by prepositional phrases. Goethe's sich einer Sache erinnern 'oneself of-a thing remind (remember a thing)' is replaced by sich an eine Sache erinnern. The partitive genitive is commonly replaced by von (eine Schar froehlicher Kinder becomes eine Schar von froehlichen Kindern 'a band of happy children'), and the objective genitive by zu (Liebe des Vaterlandes becomes Liebe zum Vaterland 'love of the fatherland'). Adjectives previously complemented by an inflected noun now take a PP: einer Sache faehig becomes zu einer Sache faehig 'of a thing capable'; es ist mir schmerzlich becomes es ist schmerzlich fuer mich 'it is painful for me'. Notice that the cases of these nouns and pronouns are still rigidly prescribed by the prepositions, rather than by the verb, adjective or head noun; the phenomenon cannot be construed as a mere reaction to the weakening of the inflections. It is a result of a change of word-order, as will be seen.

Individual cases are indeed suffering losses, however. The genitive, which is extraordinarily frequent and versatile in OHG and MHG, and which remains the only oblique case for nouns in English, Dutch, Norwegian, Danish and Swedish, is entirely disappearing in most German dialects, and is hardly used in the colloquial language.[6] As object case for verbs, it is replaced by the accusative or an and the accusative; as a partitive, by von and the dative or by Ø (ein Glas Wassers becomes ein Glas Wasser 'a glass of water'). The possessive is usually replaced by von and the dative as well (das Haus von meinem Vater 'the house of my father') or by a 'posessive dative' (meinem Vater sein Haus 'to-my father his house'), which is becoming more and more frequent in various Germanic languages (especially Dutch and Afrikaans).

The number of strong verbs is decreasing, as many go over to the weak type; i.e. the preference is for an invariant stem. The verbal affixes, though, are not reliable: the weak verbs cannot distinguish mood in the preterite, so that the preterite subjunctive is normally replaced by the periphrastic wuerde 'would' and the infinitive (cf. the tendency in Bede, above). Reflexes of the subjunctive tend to be restricted to the auxiliary (or the auxiliary as main verb) (as in English, which retains a mood distinction in be (if he were here)); and its use is increasingly restricted to unreal conditions and indirect discourse: older *ich will, dass sie gluecklich sei 'I want that she happy be' and *ich befehle, dass sie gehe 'I command, that she go' are no longer grammatical. German surpasses English in analyticity in respect to the preterite form: in German, it is falling out of the spoken language, being replaced by the periphrastic perfect - even in such a use as was machtest du,

als ich angekommen bin? 'what were you doing when I arrived?', the 'imperfect' has a literary tinge, especially in the South.

Thus German and English share many parallel developments. The word-order is more fixed in both than in the older stages; it is of course important in the near absence of subject/object morphology (the German dialects often drop the masculine singular distinction today), but it is not definitive in German as it is in English. Die Mutter liebt die Tochter and weil die Mutter die Tochter liebt are usually unambiguous. But the order of subject and object may be reversed, in which case intonation is the disambiguating factor: in diesen Stunden unterrichten die Kinder die Studenten 'in these classes teach the children the students; in these classes it is the students that teach the children (not the teacher)'. The flexibility of German word-order and its continuing use of inflections are related to the fact that the early identification between verb-final order and the subordinate clause has been not weakened but strengthened in the course of the history of the language. Because of this, German has not only retained many archaic features, but it has also innovated archaic features.

Verb-second order is primary in main clauses from about 600 A.D., and subject slot-fillers eventually come into use sentence-initially, as in the other languages (es war einmal ein Koenig 'it was once a king; once upon a time there was a king'; da kommt doch gestern der Karl zu mir, und sagt... 'there comes so yesterday the Karl to me, and says...'). However, the order of the elements in the VP in main clauses remains the reverse to English: sie hat nach ihrem schweren Unfall sehr bald wieder gehen gelernt 'she has/ after her bad accident/very soon/again/to-walk/learned; she learned/ to walk/again/very soon/after her bad accident'. This separation of the finite and non-finite parts of the predicate in main clauses (and in subordinate clauses without conjunctions: waerest du dort gewesen... 'had you been there...') is often referred to as the Rahmen ('frame') construction. Some have held that this construction was introduced 'from above', i.e. via the literary language, but there is no evidence of this, as the construction is found in all manner of texts in the fourteenth and fifteenth centuries, and is well-established in the pamphlets and dialogues of the sixteenth century. It becomes a rigid rule in the seventeenth and eighteenth centuries, but it is possible to 'break' it from the second half of the eighteenth century (the Sturm und Drang period), in accordance with the length and content of the sentence elements. This is condemned in Goethe's time by such grammarians as Gottsched and Adelung, and the school grammars are still inflexible on it, but reputable writers often violate it from this time on (Engels writes in a letter in 1886, "Das deutsche...das uns auf der Schule eingepaukt wurde, mit seinem scheusslichen Periodenbau und dem Verbum durch zehn Meilen Einschiebsel vom Subjekt getrennt, hinten am Schwanz", "the German...

that was crammed down our throats in school, with its atrocious periodic construction, and the verb divided from the subject by ten miles of interpolations, at the tail-end"). There is no clear diachronic tendency in the writings of the past two hundred years, however, for the Rahmen construction to be more or less rigidly adhered to.

The use of verb-final order in subordinate clauses is occasionally disregarded by classical writers as late as the nineteenth century, but it becomes regular around 1500. The second half of the fifteenth century sees great activity in the translation of Latin, and some constructions which are infrequent in OHG and MHG become commoner at this time. Some have since fallen out of use, e.g. the accusative and infinitive construction as in Lessing's (in the eighteenth century) die Theaterstuecke, die er so vollkommen nach dem Geschmacke seines Parterres zu sein urtheilte 'the plays, which he so perfectly after the taste of his parterre to be considered; the plays, which he considered to be so entirely in keeping with the taste of his pit'. The fixing of the verb in clause-final position in dependent clauses is considered by Behaghel (1923), Lockwood 1968) and others to be a result of this Renaissance imitation of Latin. The close identification of verb-final position and the subordinate clause is attested in the earliest documents, however.

The rigid fixing of verb-final order in dependent clauses and of the Rahmen construction in main clauses in the sixteenth century is accompanied by some interesting phenomena. Some postpositions develop sporadically in OHG (halb 'side' as in unser halb 'on our side') and MHG (halben (same meaning)), but they cease to be productive and are retained only in frozen forms (e.g. deshalb 'because of that', meinethalben 'for my sake'). But in the classical period, many develop and are still in use today. The adverb entlang 'along' is borrowed from Low German, and used as a postposition (das Tal entlang rauschen 'rush along the valley'); it is now unusual except as a postposition, although it is occasionally used prepositionally in older writers. The postposition gegenueber 'opposite' is formed in the eighteenth century; in the sense of 'vis-à-vis' it is always postposed in modern German. Similarly, zuwider 'contrary to' and zufolge 'according to' begin to be used postpositionally around this time. The construction von...Wegen 'from the way (of something), because of' is attested from the thirteenth century, but at the beginning of the seventeenth, wegen begins to be used alone, before or after the noun. In the eighteenth century, nach 'after' begins to be postposed. No such formations occur in the other Germanic languages.

NHG also innovates the adjectival or participial modifier construction, which precedes its head (unlike its equivalent in English,

the relative clause). Such constructions occur sporadically in OHG, and less frequently in MHG (except in frozen expressions like wol getān 'well-done'), but they become common in early NHG, especially in the language of the Chancery, where Latin influence is rampant. They are also found, however, in sixteenth century writers who avoid Latin usages. It is characteristic of a language with verb-final order, as has been seen, to place the modifier before its head; only the attributive adjective and possessive noun remain in this position in the other Germanic languages. Kuno (1974) shows why the preposed participial construction is introduced into German: it is a device which minimizes patterns causing perceptual difficulties. The centre-embedding of clauses, as in the cheese [the rat [the cat chased] ate] was rotten and that [that [the world is round] is obvious] is dubious, reduces comprehensibility in any language because of the limitations on human memory, and it is apparently avoided by left- or right-embedding, depending on the general structure of the language. A VSO or SVO language moves elements from left to right; thus English would right-embed the clauses in the above example: the cat chased the rat that ate the cheese that was rotten. A consistent SOV language like Japanese would left-embed them: cat chased rat ate cheese rotten was, placing the relative clauses before their heads. In postnominal position, they would guarantee centre-embedding. It is because the non-finite parts of the verb are final in main clauses, and all parts in subordinate clauses, that German too may prepose clauses as participial constructions: die in diesem Fruehjahr besonders zahlreich auftretenden Maikaefer 'the in this spring particularly numerously appearing June bugs' (which must in English be right-embedded: 'the June bugs which are appearing in especially great numbers this spring). The same holds for adjective phrases, i.e. when the main verb of the embedded S is a copula and the predicate contains constituents in addition to the adjective. Whereas in older writers, constructions are found such as der reiche Seneca an Witz und Vermoegen 'the rich Seneca in wit and ability' (Opitz, 1597-1639) and sein frommes Leben trotz alles Reichtums 'his pious life despite all (his) riches' (E. T. A. Hoffmann, 1776-1822) (cf. Chaucer's the clerke's tale of Oxenford), this ordering is no longer possible, and the entire adjective phrase is preposed (postposed in English): ein fuer Eindruecke empfaengliches Gemuet 'a to impressions receptive nature'.

German does make use of (rightward) extraposition, however, thereby relaxing its verb-final constraint in subordinate clauses and non-finite-verb-final constraint in main clauses. The entire subject clause is extraposed in ich denke, dass es deutlich ist, dass die Erde rund ist 'I think it is clear that the earth is round', and a relative is extraposed from an NP in er hat gelacht, weil ein Mann es gemacht hat, den er nie vorher gesehen hatte 'he laughed because a man did it, whom he had never seen before'. It was seen above

that the Rahmen construction can be broken depending upon the length or content of the constituents in the VP (e.g. sein Freund wurde jahrzehntenlang mit Vorwuerfen ueberschuettet wegen Details der Anordnung und Herausgabe (Kafka) 'his friend was for-decades with reproach showered because-of details of (its) structure and publication'). Kuno (1974) considers, however, that German would be unspeakable if it adhered rigidly to verb-final order in dependent clauses without making use of preposed participial constructions, because of the inevitability of centre-embedding when elements are transposed to the right in a verb-final language.

Many characteristics of verb-final order are manifest in the German independent clause, although the finite verb must appear in second position. It has been seen (three pages ago) that the order of elements, excepting the finite verb, is the reverse of the English order; adverbs, verbs, and direct and indirect objects are 'serialized' from right to left in German, as in consistent SOV languages. Maling (1970)[7] considers that the order of objects relative to the verb is indicative of the basic word-order of a language, and proposes a universal principle in accordance with which the direct object occurs closer to the verb than the indirect object in the unmarked or dominant order (p.139). She therefore holds German to be an SOV language, giving the example Die Akademie/hat/im vergangenen Jahr/dem Schriftsteller A/den Preis/verliehen, where the indirect object duly precedes the direct object, in opposition to the English The Academy/awarded/the prize/to writer A/during the past year. Maling claims that this principle can also explain certain developments in the history of English syntax. The ordering of objects in OE, she says, is roughly the same as in modern German, but with the shift of the verb between the OE and ME periods from the end of the VP to the beginning of the VP, the ordering of objects is reversed. It is not clear, however, what the order of objects in OE is. Instances of the SVO-type are frequent, for example, he sealde his sweord þam ombihtþegne (Beowulf) 'he gave his sword to the attendant' (cf. German er gab dem Diener sein Schwert, where no part of the verb occurs clause-finally, unlike Maling's example). Furthermore, in the case of pronominal objects, the indirect follows the direct in modern German (er gab es ihm), and precedes the direct in modern English (he gave him it). Indeed, it is the rule in English that the nominal or pronominal indirect object precedes the direct object, unless it is a prepositional phrase (he gave it to him). It is probably true that the direct object occurs closer to the verb than the indirect in general, but the order of objects cannot be taken as a criterion for the determination of underlying basic order, since typological shifts do not affect all aspects of a language simultaneously.

Ross (1970) tries to show that a language can prove itself SOV or SVO by its direction of deletion of indefinitely many occurrences of a repeated NP in a conjoined structure. He formulates a rule of gapping which operates forward to delete identical elements when they are on left branches of a tree (as in an SVO language), and operates backward when they are on right branches (as in SOV). Ross' rule of gapping is optional, and it can apply at any point in a derivation. English can gap only forward (*I fish and Bill ate rice), and Japanese only backward (watakusi wa sakana o, Biru wa gohan o tabeta 'I (prt) fish (prt), Bill (prt) rice (prt) ate'), in keeping with their respective basic word orders. German, however, gaps only forward in main clauses (*Ich den Fisch und meine Mutter aufass den Reis 'I the fish and my mother ate the rice'), but both forward and backward in subordinate clauses: weil ich den Fisch, und meine Mutter den Reis aufass, wurden wir beide krank; weil ich den Fisch aufass, und meine Mutter den Reis, wurden wir beide krank 'because I ate the fish and my mother the rice, we both got sick'. In view of these facts, and the fact that German has rules which permute elements rightward around a variable (e.g. extraposition), Ross concludes that the underlying order of the language is SVO, and not SOV as is often assumed in generative analyses. Thus forward gapping may apply before the rule that shifts the verb to clause-final position in subordinate clauses, and backward gapping may apply after. If SOV order were basic in main clauses, then backward gapping, as formulated by Ross, would be applicable there. By his criterion, not only German, but but Hindi and Turkish also are SVO languages, although classified as SOV by Greenberg (both have rules moving elements from left to right: Hindi can extrapose from an NP to the right of the verb, and Turkish allows a dative or locative NP to follow the verb; and both languages gap in either direction). Ross even concludes that PIE is an SVO language as well, since all its descendents are for him SVO.

It seems that Ross has since revised his position, and that he considers gapping to be the output of two separate rules.[8] Similarly, Maling (1970) proposes that a first rule, conjunction reduction, which is probably universal, account for the reduction of VSO + VSO to VSO + VO, and SOV + SOV to SO + SOV; and a second rule, forward gapping, be language-specific, since Chinese and Thai are apparently SVO languages but do not gap. Both of Maling's rules apply after any movement transformations - an SOV language with both rules could gap both forwards and backwards - so that the phenomena of gapping cannot reveal what is the underlying order of any language.

According to Smith, gapping is abundantly attested in the early Germanic dialects, and it is forward in every instance but one (in a rune c. 700 A.D.). Regardless of whether gapping is indicative of basic order, it is evident that German has alone among the Ger-

manic languages shown signs of changing its direction of development since the Renaissance. Another area where this is apparent is its plural formation. The -s plural marker goes back to PIE (cf. Greek, Latin and Gothic and Old Saxon dagōs 'days'), and it replaces any other plural markers in French, English and other related languages. In OHG, however, this ending disappears, and must be borrowed back from Low German in the early NHG period, so that it now marks plural on borrowed words (Bonbons 'candies') and family names (Buddenbrooks). A considerable variety of plural markers is retained in German, and the two most productive types are not even inherited from PGmc, but innovated. The PIE neuter n-stems (e.g. Latin genus) lose their -s in PGmc through rhotacism: *kalboz (nom.), *kelbiro (gen.), *kalb (acc.), *kelbir (nom. pl.) 'calf', and this -ir, although a stem final, is generalized as a marker of plural. In OHG, only a few nouns take -ir in the plural (the names of domestic animals and plants), but it is later extended to other neuter stems (Weiber 'women', Kinder 'children'), and then to masculines (Maenner 'men', Schier 'skis'). The other innovated plural marker is umlaut, which is originally purely phonological. By the MHG period, the article functions exclusively as sole marker of plural (as in French): daz kint, diu kint (now das Kind, die Kinder), but in early NHG, when verb-final order in dependent clauses and the Rahmen construction in main clauses become rigid rules, a move backwards toward syntheticity is made. Umlaut and the -er plural are generalized to more and more words (formerly invariable Boden 'floor' is now Boeden in the plural, Brot/Brote 'bread/loaves' is now Brot/Broeter). Recall Greenberg's universal that states that SOV languages tend to have case systems. While case and number are certainly distinct, and number inflection is almost always retained when case morphology collapses,[9] nevertheless the generalization of umlaut and an innovated suffix as plural markers in German subsequent to an increasing reliance upon the article as sole marker of plural demonstrates a move away from the invariable word and segmentalization characteristic of a VO language, back towards the fusion of stem and affix characteristic of the OV type.

Indeed, there is no consensus on the underlying order of Modern German, as there is no consensus on what should be the criterion for its determination. The formulation of (a) gapping rule(s) is not beyond dispute; other phenomena which typically accompany one order or the other, such as the order of objects and the position of adjectives, apparently develop at different paces from each other, so that at any point in time such a feature could reflect an archaism or an innovation. For example, the early Germanic dialects show signs of developing into SVO languages, where the adjective typically follows its head, yet this order seems to be archaic rather than innovative. Greenberg classifies German as SVO, presumably because of its verb position in main clauses,

although it is actually more characteristic of the language that the verb be in second position than that the verb immediately follow the subject - topicalization of objects and adverbs is extremely common in German. Bach (1962), however, treats it as SOV in the interests of simplicity of description: a phrase structure rule rewrites the VP as NP+Verb, and a set of transformations then generates subordinate clauses included in larger constructions. If the Verb remains in clause-final position after these rules have applied, and a final S boundary follows, then an obligatory rule moves it to second position. This analysis accounts for the reverse order of elements in the predicate in German, and all three verb positions are derivable with only one specific and explicit verb-position rule. Vennemann (1972, 1973), on the other hand, attacks transformational grammar for thus characterizing German as a syntactically simple language. He assumes that it is an SVO language with "very many complicated rules arranging all constituents in an unnatural order" (1973, p.46). since some "overt manifestations of primary semantic categories" are not basic but derived by rule, while the basic order is confined to the subordinate clause (a secondary semantic category). His theory predicts that German will replace its unnatural serialization rules with natural ones, and become a consistent SVO language. But it is not clear that adults do represent primary categories (e.g. singular, present, indicative, active, main clause) most often to children, as Vennemann says, and the notion of conflict between the rules of the base and primary categories such as these is rather too vague to be worked with at present. Traugott's (1967,[10] 1969) dissatisfaction with a Bach-type analysis for OE, where the situation is roughly similar though the word-order is not as fixed as in German, is differently based. She says that there is at present no principle to choose between SOV for the sake of simplicity and SVO as more in keeping with the historical development of the language (1967). In view of the apparent change of word-order of the MV and Aux between OE and the later periods, she cannot choose between the solution that OE and ME both have underlying SVO order (i.e. Aux + MV) and an order-switching transformation was deleted at the end of the OE period, and a solution which abandons the principle of the ordered-string base, and has an order-introducing transformation added to the grammar at the end of the OE period (1969). However, unless one is reluctant on a priori grounds to allow for diachronic change in phrase structure rules, it seems correct to reverse the order of the NP object and the Verb in the base VP at some point in time, and the order of MV and Aux, and of NP and Postposition, etc.

Assuming that there is no good reason to suspend the criterion of simplicity of description in determining the underlying order of a language at a given point in time," let us try to determine when and why it should happen to change. It is clear that a shift from SOV to SVO is already underway in PGmc. At around the same

time, the same shift is taking place is Romance. The parallel developments are remarkably similar to those in the Germanic family - one wonders all the more at the appeal of Strang et al. to 'accidental and evolutionary factors'. Classical Latin, like PGmc, is ambivalent in syntactic structure. Although verb-final order is the most usual, Latin has mainly prepositions rather than postpositions (the construction annō post 'after a year, a year afterward' testifies to the adverbial origin of post- and prepositions; originally the case stands alone as in portā ab iit 'from-the-gate away he-went'; then with a change of word-order, ab becomes attached to the noun). The OV comparison type is replaced in Classical Latin by the VO type major quam tū 'bigger than you'; the old construction lingers with pronouns (tē major). The genitive modifier precedes the noun in early Latin, and the order subsequently shifts.

Latin noun morphology is inconsistent in the same way as that of PGmc: the three-way gender system and the distinctions among the various declension types are largely arbitrary. The genitive case is represented by seven different endings. Only a few verbs causative in form remain (in early Sanskrit, every verb can form its causative); by late Vulgar Latin, the frequentatives are synonymous with simple verbs, and sometimes replace them (e.g. cantāre replaces canere 'sing'). The verb system, at least that which is attested, is completely synthetic except for the passive in some tenses, which makes use of the auxiliary be and the past participle. The forms of the perfect tense vary greatly in fairly arbitrary ways, and this accelerates the disappearance in French of the variously formed 'passé simple' and its replacement by the 'passé composé', a perfect periphrasis. Although most adjectives and adverbs are compared synthetically in Latin, a few form their comparatives with adverbs which later become obligatory for all in many of the derivative languages (plus or magis pius 'more pious').[12]

The accent in early Latin is thought to be one of pitch; intensity is added to it during the Classical period, so that by the time of the breakup of the Empire, the distinction between long and short vowels is lost, and the word has strong and weak syllables instead. By Late Latin, feminine nouns are no longer declined (cf. Gmc), the plural ending is generalized to -s, and all prepositions take the accusative. The stage is set for the almost total collapse of the morphology during the Vulgar Latin period. By the fifth century A.D., only two of the six Latin cases remain in Gallo-Roman, the subjective and the oblique (the other Romance dialects retain only one):

	m. singular	f.	m. plural	f.
subjective	li murs	la rose	li mur	les roses
oblique	lo, le mur	la rose	les murs	les roses

The neuter survives in adjectives only until the Middle French (MF) period. Notice that the form of the masculine noun is identical in the subj. sg. and oblique pl., and in the oblique sg. and the subj. pl.. The article, on the other hand, is identical in the subj. sg. and pl.. Such a system is not bound to last. By the twelfth century, the oblique case supplants the subjective in almost every noun, and by the sixteenth century, the plural -s is heard only sentence-finally and before vowels. The dative and genitive cases are replaced in Old French (OF) by the prepositions à and de, respectively.

The synthetic forms of the Latin passive are replaced by be and the past participle. The old synthetic future, which becomes indistinguishable from the present in the third conjugation in Common Romance (Latin lego/legam, legis/leges, etc. become in Romance lego/lega, lege(s)/lege(s), etc.), is replaced by a periphrastic infinitive plus habēre - this may be a rather older development, judging from the order - and this in turn becomes synthetic (daras 'you will give' is found in the tenth century). Later, new periphrases arise to replace this synthetic future, this time with the auxiliary preposed, not postposed, consistent with SVO order: Spanish ir 'go' and the infinitive, French aller 'go' with the infinitive (it seems that some French children are today unaware of the existence of the simple future). A conditional mood is also created in OF using the same auxiliary as the future (cantāre habēbam is collapsed into chanterais 'I would sing'). The auxiliaries avoir and être and the past participle combine to form a periphrastic perfect, pluperfect, anterior past (j'eus aimé), future perfect, and two past subjunctives (j'aie aimé, j'eusse aimé). The present perfect ('passé composé') eventually evolves into a simple past in most Romance languages (as in German), although the simple past form is still alive in Portugese, South Italian, Provençal and most American Spanish dialects. The number of present tense forms is extended in several Romance languages (as in OE): French tries out various durative constructions, though none survive long (je vais allant, je suis allant, je suis à aller, je suis après à aller); Spanish, Italian and Portugese all establish constructions like estoy estudiando (Span.) 'I am studying'.

Most Romance languages tend increasingly to avoid use of the subjunctive. Its use is optional, according to the nuance of doubt, in the early dialects; then rigid rules develop in each. (Rumanian alone tends to prefer the subjunctive to the infinitive, even in a structure like 'it began to snow'; it shares this tendency with the Balkan languages.) The subjunctive generally becomes the automatic consequence of the presence of certain verbs (e.g. of emotion) and conjunctions in the Romance languages. In the sixteenth century, when the present subjunctive and indicative forms are falling together, que becomes the regular marker of the subjunctive in French.

In the Romance family, as in the Germanic, most of the many impersonal verbs of the old dialects either disappear or are used personally (e.g. OF apert 'it is evident' and chaut 'it matters' disappear; (il) m'ennuie and (il) me souvient become je m'ennuie 'I am bored' and je me souviens 'I remember'). Many intransitive verbs become transitive as well (this has recently been the case with sortir, descendre, etc., which now can mean 'take out' and 'take down' as well as 'go out' and 'go down').

Latin word-order is relatively flexible; the subject/object marking is still fairly consistent. The verb commonly occurs clause-finally, although second position is accepted with the copula esse quite early on. By the Late Latin period, only 25% of verbs are final in main clauses, and 37% in dependent (in a work of 383 A.D.), whereas 84% are final in main, and 93% in dependent, in a section of Caesar's work (according to Lehmann 1972). The Latin interrogative is marked, not by word-order, but by enclitic particles (-ne, -nonne, -num) which follow the first word of the sentence (cf. the interrogative enclitic in Gothic: ga-u-laubeis? 'do you believe?'). The particles disappear, in accordance with Greenberg's Universal 10, that question particles do not occur in VSO (SVO) languages. Intonation is often the only marker of interrogation in the Romance languages, but OF inverts the subject and verb, as do the West and North Germanic languages. Inversion is retained in all Romance languages as a stylistically marked order (e.g. French vint la guerre 'then came the war', Spanish no quiero yo el caballo 'I don't want the horse') and after certain adverbials (e.g. Spanish entonces 'then'). Notice that verb-initial order is contingent in such cases: what is distinctive is the order of the subject and verb relative to each other, and not the position of the verb in the sentence, as in German.

By the early twelfth century, according to Brunot and Bruneau, two out of three sentences are in SVO order in French, and by the thirteenth century, it is three out of four. Verb-final order is retained to a certain degree in subordinate clauses in OF; the past participle and infinitive occasionally linger in clause-final position even in MF, and are retained in this order in certain frozen constructions today (e.g. il est parti sans mot dire 'he left without word to-say; he left without saying a word'). Some Romance languages reflect the archaic SOV order in their placement of object pronouns. In French, Italian, Rhetish and Rumanian, the object pronoun is generally proclitic to the verb, except in the affirmative imperative (French il me regarde, regarde-moi, ne me regarde pas). Another reflection of SOV days is the preposing of a small number of the commonest attributive adjectives in the Western Romance languages (Rumanian postposes adjectives only for stylistic relief), all the other adjectives following the noun. A further archaic feature is the order indirect object - direct object with the first and second

person pronouns as indirect object in French (il me le donne, il te le donne, but il le lui lonne).

An interesting parallel between English and French is the development of it is me/c'est moi. In the twelfth century, the French construction is ce suis-je, ce es-tu, etc. (cf. Chaucer's it am I, and Modern German es bin ich). However, in French as in English, the verb comes to agree with the preceding NP with the rising dominance of SVO order (subject/object marking disappears at the end of the fourteenth century in French), and c'est becomes fixed as subject - verb. There is no evidence that c'est je is ever said (as it is I is said in English); there is a strong tendency from the OF period on for preverbal pronouns to appear as unstressed 'conjunctive' forms (je, tu, il, etc.) while those following the verb or a preposition are formally distinct as 'disjunctive' forms (moi, toi, lui, etc.) - the positional rather than the functional factor is thus stronger in French throughout its history than in English. The construction c'est il outlives ce suis-je, but c'est lui is found as early as 1460. The expression c'est tends in Modern French to be invariable in number and tense (c'est eux que j'ai vus 'it's them that I saw'; cf. English there's three people altogether I invited).

This c'est allows French to retain normal order in cases of topicalization. Whereas English may simply prepose an object in order to emphasize it, tolerating OSV order in a main clause (e.g. that film you want to see?), French will make use of two clauses, so that the preposed object is merely a relative pronoun: c'est ce film-là que tu veux voir?. Similarly, French does not tolerate the order adjective - subject - verb (courageous I am!), but inserts an object pronoun between the subject and the verb in order to retain the normal order of a main clause in spite of the topicalization: courageuse, je le suis!.

Although English shows a certain aversion to inversion during its history (e.g. the main verb may no longer precede the subject in an interrogative; only the auxiliary may), French innovates many more devices to retain normal order. The OF interrogative inverts as does the OE: est morte m'amie? 'is dead my sweetheart?', but this does not last long in the case of nominal subjects. These are soon retained sentence-initially and represented pronominally after the verb: mon amie est-elle morte?. This 'complex inversion' is still taught in the schools, and used in the literary language, but it has been replaced in the spoken language by other constructions. In the fourteenth century, -t- begins to be inserted between the auxiliary and the pronominal subject in the third person in interrogatives (mon amie a-t-elle pleuré?), and the frequency of the sequence -t-i(ls) after the verb gives rise to the use of ti as

an interrogative particle, enclitic to the verb (this is still in use in some French dialects: c'est-ti pas beau? 'isn't that nice?'; and is customary in Québecois: tu viens-ti? 'are you coming?'). In this way inversion is avoided. Another device is est-ce que, which develops in the fifteenth century, and is still prefixed to the declarative SVO string to form a question: est-ce que tu as vu ça? 'is it that you saw that?' (Popular Rumanian similarly prefixes oare 'whatever' and South Italian che 'what' to its yes/no questions to retain normal order). A further device, in the case of interrogative-word questions, is the reinforcement of the interrogative word by que, and the retention of normal order: où que tu as fait ça? 'where that you did that?'. This que then tends to disappear, and the interrogative word is now commonly used with normal order in France (quelle heure il est? 'what time it is?'). Intonation is indeed often sufficient in French as in English (where the Aux may sometimes be dropped when the tense is clear from the context: you want to come?). Inversion is practically abandoned as a sign of interrogation in the French of France.

The development of the negative construction is also consistent with the ascendence of SVO order. In OF, ne suffices before the verb (as does ne in OE), the modifier preceding the head in accordance with the SOV type. No word can negate unless ne is present before the verb: je ne vois personne 'I not see person; I see no one', je ne vois aucun des étudiants 'I not see some-one of-the students; I see none of the students'. Later, ne becomes redundant and falls out of use (as in English: OE ic ne secge → ME I ne seye not → I say not), and these other words acquire negative force (Qui est là? Personne 'Who is there? No one'). In the new order, the modifier follows its head, in accordance with SVO order (je le fais pas 'I it do not; I don't do it')(For some reason, English develops a dummy do which moves the negative adverb back to preverbal position: I don't say).

French further demonstrates its typological consistency (in comparison with English) by its compounding techniques and NP-internal ordering. Whereas English can still create OV compounds, although this order does not surface in the predicate, French can create only VO compounds: gratte-ciel 'skyscraper', tue-mouches 'fly-swatter', which indicates that the OV order with pronouns is very much of a frozen construction. English is also capable of left-embedding many types of modifying nouns (Mary's brother's wife's friend, office supplies company inspector), while French must always right-embed them: l'ami de la femme du frère de Marie, inspecteur d'une compagnie de fournitures de bureau. This is well-illustrated by the reverse orders of the abbreviations NATO and OTAN in the two languages, and of MUCTC (Montreal Urban Community Transit Commission) and CTCUM (Commission du Transport de la Communauté urbaine de Montréal).

The Germanic and Romance families, then, are in the process of consolidating SVO order, and they develop from languages which are themselves in transition from SOV to SVO orders. The evidence suggests that these developments are set off by the same impetus. Lehmann (1971) writes that the Romance languages establish SVO order during a period for which we have little data, but, in fact, the increasing dominance of SVO features in Latin makes the subsequent developments mere sequels. This is not so clear in the case of the Germanic family, where the proto-language must be reconstructed. But it is well-known that the IE languages generally develop prepositions, SVO-type comparison constructions, postposed relative clauses and adjective phrases, and other features of the new type, as well as fixing their word-order and losing their inflectional systems. Lithuanian, an extremely conservative language morphologically, which retains seven cases and three numbers, nonetheless establishes SVO word-order, and its prepositions are more numerous than its postpositions. The Slavonic family is similarly conservative; Russian still has three genders and six cases, but it too has SVO as its primary unmarked order, prepositions rather than postpositions, and the genitive following the noun. Icelandic innovates the same SVO features as Russian, despite its archaisms. Only the descendents of the Indo-Iranian branch of IE, and Armenian, retain SOV word-order, although Persian has prepositions, and its adjective and genitive follow their head.

Developments within the IE proto-language must be responsible for those in the evolution of the derived languages. Scholars disagree, however, on the original word-order of PIE. Fourquet, Kuhn and Braune believe it to be free, determined only by the psychological motives of the individual speaker.[3] This view is compatible with the studies of Dover (1960) and Staal (1967), who claim that it is impossible to characterize syntactically the word-order of Classical Greek and Sanskrit, respectively, and that if such characterization seems to be possible, it is a strictly secondary (incidental) phenomenon.

Dover observes that in the fifth and fourth centuries B.C., the Greek subject precedes the verb as a general rule (four times as often as the reverse order in independent clauses in Xenophon, and nine times as often as the reverse order in relative clauses in Lysias). The ratio of OV to VO orders fluctuates more, but OV usually occurs at least twice as often in most types of clause. Dover says, however, that due to the great variety of orders both among dialects and within authors, no syntactic rule of word-order can be established for Classical Greek. The primary determinants of word-order lie 'outside the utterance'; they are 'logical principles'. He proposes two logical types for Greek: the nucleus (an element which is not predictable from the preceding elements) and the concomitant (which is predictable). For example, the

string dogs bite, syntactically only NP + VP, is actually in Greek N + C, C + N or N + N, depending on whether it is the response to the question "Which animals bite?", "What do dogs do?" or "How do some animals defend themselves?". Dover invokes this principle to explain why Greek utterances identical in structure and content may differ in word-order; in English word-order is supposedly determined by syntactic categories, and intonation by logical categories. When syntactic principles supersede logical (the rules of word-order in New Testament Greek are much more easily definable in syntactic terms than those of Classical Greek), the scales are weighted in favour of SOV because (1) demonstratives are preferred sentence-initially, and many are pronouns; (2) the content of the subject can be expressed by the person endings of the verb, so that if the subject is nucleus, it will precede rather than follow the verb (?); and (3) many verbs have the character of copula, and thus tend to be sentence-final (?). Apart from the fact that the verb usually follows the subject and object at the end of the clause in Classical Greek, however, we of the post-Greenberg era can see many characteristics of various word-order types in Greek, and need not appeal to such random assemblages of factors as Dover's three. The language is basically a prepositional one; only a handful of usages represent the postpositional aspect of SOV order (e.g. arithmoũ péri 'as to number'). By the end of the fifth century B.C., preverbs and verbs are indissoluble, testifying to an older SOV order (cf. Latin inclaudere 'enclose' vs. recent English close in). The negative adverb precedes the verb, also testifying to OV order. Greek is a poor candidate for a free word-order language.

Staal makes a similar claim for Sanskrit. The Indian theorists, he says, deny any word a specific position, and consider sentences differing only in word-order equivalent and synonymous. Western Sanskritists, however, find in Sanskrit certain 'preferential', 'habitual' or 'traditional' arrangements, and Staal accuses them of being preoccupied with usage rather than grammaticality (i.e. performance rather than competence). Staal states that Sanskrit word-order cannot be described by even a very complicated set of grammatical rules. He proposes that the base of the language consist not of ordered strings (S → NP + VP), but of unordered sets (S → {NP, VP}, NP → {N, Num, Case, (S)}), generating 'wild trees' whose branches are in no specific order. The system of grammatical relations would be identical to that in ordered-string rules; once generated, they undergo a set of (morphological) transformations which affix the appropriate inflections to each word. Staal does not stop here; he proposes that a universal base for all languages be of this type, to account for the discrepancy among word-orders in the languages of the world, and since it is meaningless to generate the NP and VP in any particular order for such languages as

Sanskrit, Greek and Latin. He claims that Chomsky's (Aspects) system of grammar is appropriate only for languages with fixed word-order, but that these languages actually introduce order transformations very early in the transformational component. He grants that universal base rules of the type he proposes may contribute to a more complicated particular grammar than if the particular grammar is analyzed alone, but if one has a 'general theoretical purpose', one must assume an unordered base.

Chomsky (1965, p.125f.) would agree that a language whose word-order was absolutely free would have no need of ordering rules, either in the base or in the transformational component, and that a set-system would be well-suited to such a language. But he denies the existence of any natural language which lacks 'internal organization and order of derivation'. In other words, there exist no languages with morphology but without syntax. Staal is right, however, in his observation that transformational grammar cannot state anything about the relatively free word-order of richly inflected languages versus the relatively fixed word-order of poorly inflected ones. Chomsky calls this freeish word-order 'stylistic reordering', and considers it a phenomenon of performance which 'has no apparent bearing on the theory of grammatical structure'. In the context of historical linguistics, however, it is indeed important to know what part of the grammar is undergoing change, if at one point it distinguishes among inflections and at another among word-orderings. Vennemann (1973) criticizes transformational grammar for ordering deep structures linearly, claiming that PIE marks relations morphologically rather than by word-order. But he thinks that a transformationalist is bound to consider that most IE languages are altogether simpler than the proto-language, since they have lost most of their morphological and scrambling rules. I cannot see any transformationalist holding this position, though, because there has been a simultaneous increase in the number of categories (e.g. Det, Modal) and rules such as extraposition and subject-raising, and in the complexity of rules of intonation - in fact, this is a suggestive area for research.

Staal's presentation of Sanskrit as a free word-order language is yet to be reconciled with Chomsky's denial that such languages exist. Staal's statement that Western Sanskritists are concerned with performance rather than competence when they observe certain patterns recurring more often than others in Sanskrit, is probably the opposite of the truth. The flexibility of word-order is surely more of an extralinguistic phenomenon than recurrent word-order patterns. Since all the other IE languages indicate SOV origins, it is likely that the appearance of free word-order in Sanskrit is the result of the development of an elaborate case system, which in turn is the result of the establishment of SOV as primary order (cf. Greenberg's Universal 41). It will be seen below that the underlying word-order of Sanskrit undergoes rather rapid change.

Staal points out, however, that even if no free word-order language exists, the universal base must be unordered to account for the various word-orders of the world's languages. But it is fallacious to argue that the common denominator of a variety of word-orders must be the absence of word-order. There is every reason to suppose that languages differ in word-order because they change their word-orders in time. The grammatical relations of the base can indeed be expressed by different rewriting rules, as Staal and Chomsky agree, and it is thus possible that the order of base constituents is subject to diachronic change. Furthermore, of the six possible surface word-orders in respect to S, V and O, only three are found with any frequency according to Greenberg's findings - and two of these (SVO and VSO) share a great number of features. There is therefore all the less reason to postulate an unordered-set base.

Rejecting the view of Fourquet, Kuhn and Braune (and implicit in Dover and Staal) that PIE word-order is not syntactically definable, let us consider an alternative. Delbrueck's position, that PIE is a verb-final language, finds support among many recent Indo-Europeanists and historians of various IE languages. Smith assumes that the order of PIE is SOV, and cites the dominance of this order in Sanskrit, Latin, Hittite, Luvian, Lycian, Celtic and the earliest Germanic dialects. Watkins (1960, 1964[14]) formulates the following patterns for PIE sentences:

Declarative with simple verb:	#...V# (unmarked)
	#V...# (stylistically marked)
Declarative with verb and preverb:	#...PV# (unmarked)
	#P...V# (stylistically marked)
Nominal (i.e. without copula):	#$^{\text{Mod}}_{\text{PredN}}$...N# (unmarked)
	#N...$^{\text{Mod}}_{\text{PredN}}$# (stylistically marked)

But there are complications to the view of PIE as an SOV language. Miller (1974) gives evidence that it is itself in transition from VSO to SOV order, and that before it completes this change, it shifts to SVO. There is some reason to suppose that subject person markings on verbs may arise as postposed personal pronouns; the first person singular pronoun in PIE is thought to be *eĝom (cf. Sanskrit ahám), and *-m and *-mi seem to be the first person singular verb endings in PIE (cf. Greek eimí 'I am'); cf. Latin -ō and ego 'I', and Greek -ō and egō(n) 'I'. Similarly, OHG bintist(u) and OE bindest 'you bind' are thought to be derived from bindes þū.

The two morphological classes of person endings and subject pronouns are apparently identical in Bantu; and in Hebrew the person affixes appear as prefixes in some tense-aspects (e.g. eçtov 'I will write', tiçtov 'you will write'), and as suffixes in others (e.g. catabti 'I wrote', catabta 'you wrote'), and are clearly cognate with the subject pronouns (e.g. ani 'I', ata 'you'). The suffixation of the person markers in PIE is thus construed as indicative of an older VSO order. In addition, there are compounds in the orders VS and VO which apparently antedate the shift to SVO order: such compounds are retained in Greek in names such as Menélaos 'withstand-man' and in poetry. The productive type in PIE and the early IE dialects is indeed the SV, OV type (cf. Greek theodótos 'god-given' and theopoiéō 'god-make; make into a god'). Since a consistent SOV language (such as Japanese) will not permit the verb to surface before any nominal, it seems that VS and VO compounds must be the residue of an earlier VSO order. Prefixes are uncharacteristic of an SOV language, yet *w- and *d- are reconstructible for PIE, and seem very ancient. Conjunction copy and deletion, like gapping, ought to operate from right to left in a verb-final language, leaving the leftmost conjunction to surface (as in Rigveda jiráyaś ca drlhá dyávā ca bhúmā tujete 'and the mountains firm, and heaven, earth tremble'), but deletion of all but the rightmost is the most favoured pattern in the early IE languages, and Miller asserts that this is a residual rather than an innovative feature (it is not clear why). There are also signs of old prepositive conjunctions (as are found in Arabic, a VSO language): *nu, *to, *su/so. More recent in PIE are the SOV-type postpositive conjunctions *kʷe (cf. Latin -que, Greek -te) and *(y)o, but they are attached to the leftmost and not the rightmost member of a heavy NP, so it seems that the typological change from VSO to SOV is never completely carried out. With the shift to SVO order, these postpositive conjunctions are replaced by prepositives, which differ in each language group (cf. Latin et, Greek kai, Germanic *undi).

The shift from SOV to SVO is inhibited in the east, apparently, Miller says, by the close contact with the SOV Dravidian languages. The Indic languages thus preserve some SOV features, such as the operation of conjunction deletion from right to left, which have dropped out of the other IE languages. In Vedic Sanskrit, gapping generally operates from left to right, and the positioning of conjunctions is also harmonious with SVO structure. This indicates that the shift from SOV to SVO begins before the appearance of the earliest Indo-Iranian texts.

Lehmann (1973) also comes to the conclusion that PIE evolves from VSO to SOV. He suggests that the adoption of OV structure superimposes a pitch accent on the stress accent. The negative and interrogative particles are apparently never postposed, as one

would expect in an SOV language. For these and other reasons, he concludes that pre-IE borrows various SOV characteristics from some SOV language, such as verb-final order, postpositions, the OV type of comparative construction and the order of nominal modifiers.

If PIE develops from VSO to SOV order, this may account for the increase in morphological complexity which is postulated for the preliterary dialects and attested in the Greek of the first millenium B.C.. It seems that Homeric Greek (c. ninth century) is morphologically simpler than New Testament Greek (first century A.D.). It also seems that the oldest stage of PIE that is reconstructible has only six cases, the dative and instrumental being originally secondary functions of the locative (Kuryłowicz, p.199). As many as eight cases are attested in some of the historical languages (e.g. Sanskrit). Perhaps this increase in syntheticity is the result of the establishment of SOV order at some time following the earliest stage accessible to reconstruction. It may also be that the failure of SOV order to be fully consolidated in the early IE dialects is responsible for their appearance of free word-order.

It appears, then, that the parallel development of the IE languages is determined by (a) change(s) of word-order in the protolanguage. Some linguists try to explain the relation between the position of the verb and the phenomena which accompany it; that is, to explain what Greenberg merely describes with his universals.

Kuno (1974) provides convincing reasons for the preposing of relative clauses in SOV languages. The same principle of the avoidance of centre-embedding accounts for the use of clause-final conjunctions (including complementizers) in SOV languages, and clause-initial conjunctions in VSO languages. Otherwise conjunctions would be juxtaposed, just as the articles are juxtaposed in German *der die den Plankton-fressenden Fisch-essende Mensch 'the person who eats the fish which eat the plankton'. The juxtaposition of only two articles is grammatical in German (die den Plankton-fressenden Fische); even if the construction is right-embedded as a relative clause, the two articles are juxtaposed (die Fische, die den Plankton fressen). In English, such participial constructions may be preposed only if there is no chance of justaposing articles: *the the plankton-eating fish, the fish that eat the plankton. Centre-embedding in NPs would be guaranteed in an SOV language with prepositions, if they are combined with preposed attributes: [of [in [on table] vase] flowers] colour ; German is obliged to postpose such attributes since it has principally prepositions: die Farbe der Blumen in der Vase am Tisch. A consistent SOV langauge with postpositions would produce table-on vase-in flowers-of colour, with untrammeled left-embedding.

Some languages are predominantly SOV, but they postpose their relatives and use clause-initial marking of embedded clauses. In Persian, which retains many SOV characteristics, but innovates some SVO features, the object may follow the verb if it is definite (i.e. marked with the accusative -ra). When the object of a verb is a clause, it obligatorily follows the verb, and the same is true of sentential subjects. A relative clause on an NP in the predicate must also be extraposed. The typological history of Bengali is similar to that of Persian, and sentential objects are here impossible in normal object position; they are either topicalized, and leave behind a pronominal copy, or they are extraposed to the right of the verb. It is clear that a language cannot insist upon verb-final order if it postposes its relatives.

Vennemann (1973, 1974) also attempts to account for Greenberg's universals. He invokes two principles for the purpose, the principle of ambiguity avoidance and the principle of natural serialization. The principle of natural serialization states that the operator will precede the operand in an OV language, and the operand will precede the operator in a VO language. This is merely a paraphrase of Greenberg's own description of his findings, however ("We have here [i.e. in VO languages] a general tendency to put modified before modifier" (p.100)); it can hardly be called upon to be an explanation of itself. Similarly, Lehmann's (1973) structural principle that modifiers are placed on the opposite side of a basic syntactic element from its primary concomitant, is of more descriptive than explanatory value.

Vennemann's principle of disambiguation must be taken seriously, however. He invokes it to account for the fixing of word-order as compensation for the erosion of the morphology of a language by sound laws. When the subject and object may no longer be disambiguated morphologically, word-order rules arise; and these eventually become redundant and are dropped when the function words (that have replaced the inflections) are degraded into a new morphology. Vennemann is not alone in believing sound change to be the causal factor in syntactic drift, as we have seen. Most traditional histories of English, for example, attribute the collapse of the OE case system to the fixed initial stress accent of PGmc (neglecting the fact that the word accent in Latin is on the penultimate or antepenultimate syllable, and that its case system collapses even more rapidly than that of OE). Vennemann claims that when a language has SVO order, but retains its subject/object morphology, it is the case that the morphology is unreliable and inconsistent, and the learners of the language mistake word-order for the primary marker of structure. But the subject/object marking in Latin remains quite unambiguous long after SVO features are innovated - in fact, the subjective/oblique distinction even survives the drastic morphological simpli-

fication of the Vulgar Latin period in the case of Old French, where there is no question about the primacy of SVO word-order, let alone the presence of SVO characteristics (such as prepositions). Baltic, Slavonic and Greek also change type prior to the weakening of their morphologies. Classical Greek has four cases, prepositions in large numbers, and even a well-established definite article and a less well-established indefinite article (tis); Modern Greek is clearly SVO in order, and it retains three cases and genders in its nouns - the nominative and accusative are distinct in all masculines and feminines in both numbers. It is abundantly evident that the weakening of case inflections does not bring about a compensatory fixing or change of word-order.

Furthermore, it has not been assumed since the early days of Indo-European studies that all inflections result from fusion with free-standing function words, although the PIE instrumental inflection seems to be adverbial in origin. Vennemann must also explain why the inflections should be replaced by function words and not new inflections. There are instances of inflections being reconstituted as such when some phonological law has reduced their distinctiveness (e.g. the person endings on Romance verbs).

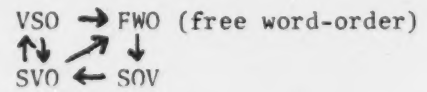
The effects of sound change are not as irresistible as Vennemann considers them. Even taking into account the fact that inflections are acquired by children later than nouns and verbs, and are thus notoriously susceptible to change, an explanation must be offered for the retention of certain inflections during periods of great phonological levelling. For instance, although -s (along with -m) is already disappearing in the speech of upper class Romans, it alone survives the cataclysmic Vulgar Latin period as a noun inflection. Compare the retention and generalization of -s as plural and possessive marker in Middle English; furthermore, -es disappears from the adjective genitive, although it is phonologically identical to the -es of the nominal genitive. Similarly, -en disappears in English as a plural marker for nouns and verbs, but it is retained to mark the past participle. Adjectival inflections disappear on predicate adjectives in late OE, and remain before the noun until the ME period (cf. Modern German, where the predicate adjective is invariable, and the preposed adjective is inflected for three genders and two declensions). It is observed above that among the earliest weakenings of the OE case system, is the confusion of the dative and accusative pronouns hine and him.

A development in Swedish is informative. The genitive is retained here only as a possessive with nouns (the partitive genitive has disappeared). No possessive dative (of the type meinem Vater sein Haus) or 'strengthened' genitive (meines Vater sein Haus) is used.

The genitive marker is generalized to -s in all contexts, with pronouns as well as nouns (although there are some frozen relics of other suffixes in the dialects, and fixed expressions in the literary language). But the prepositional genitive is developing rapidly, and more and more prepositions are being grammaticalized (i.e. losing their lexical meanings) in this construction (especially på and hos). In Norwegian, nine different prepositions are used to replace the inflected genitive. It is clear that the genitive case is not falling out of use because of the variety of its forms and uses, since the universal -s inflection is being replaced by a new variety of forms and uses. It is weakened because of the exigencies of word-order. The inflected genitive must stand before the noun in Swedish, reminiscent of SOV days, but a relative clause attached to this genitive creates a problem. In the colloquial language, the genitive phrase is occasionally ordered before the noun head, the last word of the phrase taking the -s (e.g. sjömän utanför spärrens familjer* 'sailors out-of prison's families'), but this construction often leads to 'misunderstanding and ridicule' (Wellander). The literary language also preposes the genitive phrase, but in an even more awkward way, as the head of the relative takes the -s (sjömäns utanför spärren familjer 'sailors' out-of prison families'). The innovation of the postposed prepositional phrase allows the relative to follow immediately its head, which in turn follows its head (familjer till sjömän utanför spärren 'families of sailors out-of prison'). In this way, SVO order is consolidated in the IE languages.

It is clear that inflections cannot be eroded away if they are still functional - or if they are still harmonious with the basic word-order of the language. The ability of phonological change to neutralize them is testimony to their having been superceded by some other grammatical marker - or of their incongruity with other features of the language. If a language is SOV, it tends to have a case system (Greenberg's Universal 41); but a language may have a case system and have evolved to another type, since word-order change precedes the collapse, as well as the development, of a case system.

What, then, can be the cause of word-order change? It is likely that a given word-order will change in one direction rather than another. Vennemann (1973) provides many rather far-fetched reasons for the 'naturalness' of change along these lines:



Miller suggests a more promising explanation. Assuming that the

*The translation from the Swedish is from a dictionary; it is of dubious accuracy.

first rule of the base of any language is S→NP + VP, because the orders VOS and OVS occur infrequently in the world's languages, and because there is apparently no verb-initial language which does not allow the subject to surface before the verb, Miller states that VSO order cannot be generated without some movement rule, if verb and object are both dominated by VP. If the order of the VP is NP + V, and the movement rule is lost, a shift of order to SOV is accomplished. If the order of the VP is V + NP, and the movement rule is lost, the shift is to SVO. If the language has clear subject/object marking, he says, then its base order is likely to be NP + V (i.e. SOV), so that loss of the movement rule would result in an SOV language. This is not an uncommon order change: not only is it postulated for early PIE, but also for Amharic and other modern Semitic languages of Ethiopia, which are SOV and derived from a VSO proto-language (cf. Arabic, which is VSO). The change thus formulated does not involve any change of ordering in the base component. But the shift from SOV to SVO (also evidenced outside the IE family, in Bantu, which, like French, still preposes its object pronouns) requires a reversal of the order of the NP and V in the base VP. Miller does not explain why some verb-initial languages should come to have clear subject/object marking and others not, and why this feature should correlate with underlying NP + V order; in addition, since every VSO language allows SVO order to surface, two movement rules must be postulated if the underlying order is taken to be NP + V, so that it may be preferable to postulate a shift of order in the base in the case of the VSO to SOV change, after all.

Bach (1967) suggests that the best order for a universal base is SVO, because of the necessity for distinguishing the subject from the object in the most efficient way, Indeed, Greenberg's findings reflect SVO as the most frequent order (followed by SOV, and then VSO). However, Vennemann (1973) and Kuno both consider SOV a superior order. Vennemann holds that the most natural position for the verb is outside the subject - object nucleus, where its tense, aspect and mood markings do not interrupt the 'propositional nexus' between S, O and V. He considers SVO inferior because the verb is here burdened with the syntactic function of distinguishing the subject and the object, in addition to its semantic function of relating the comment to the topic. It is not clear, however, why it should be more burdensome to differentiate the subject and object than to mark clause-final position, as the verb certainly does in SOV languages (thereby obviating the need for relative pronouns in relative clauses, for example). Vennemann might as well say that SVO is superior to SOV because the verb is there relieved of the syntactic function of marking the end of the clause. It is even less clear in what respect his so-called semantic function and syntactic function should be two tasks at all.

Kuno's reasons for the superiority of SOV to SVO give more pause. From the point of view of perceptual ease where embedded clauses are involved, SOV and VSO orders clearly avoid centre-embedding. Any embedded S on the subject position in an SVO language is bound to be centre-embedded unless it is extraposed to the right of the highest verb. In an SOV language, however, it is possible to left-embed such clauses and thereby retain them adjacent to their head, both in subject and in object position. Kuno is puzzled by the fact that the IE languages abandon this perceptually superior order for a perceptually inferior one - a shift to VSO order would incur no loss of this kind, since right-embedding in a verb-initial language does the job of left-embedding in a verb-final language. The SVO languages must develop syntactic devices like extraposition and subject-raising to avoid centre-embedding in subject position. Evidently perceptual ease is not the governing factor in language change. Bever and Langendoen write that inflectional systems make sentences easier to understand, but the language more difficult to learn, that such systems develop partly for perceptual ease, and disappear partly because of the learning difficulty. They postulate a historical competition between what makes a language easy to understand and what makes it easy to learn. The learning of a 'predictive' grammar is for them constrained by a function of its formal simplicity and the simplicity of systems for speech perception and pr[illegible]ction, and there is evolutionary pressure to maximize the recoverability of deep structure relations, bringing about surface order constraints in some periods and inflectional systems in others. This is misleading, however. The role of systems of speech production and perception is not a diachronic one; Kuno's treatment of speech perception can be useful in explaining, for example, why an SOV language may require a case system - that is, the nature of, and relations among, these rules that are formally simple in a synchronic grammar. Notice that the diachronic phenomena which Bever nnd Langendoen claim cannot be related to each other by an examination of the rules alone (that is, the disappearance of inflections in English and the appearance of restrictions on the absence of relative clause markers on clauses modifying postverbal nouns) are seen in this study to be both of them results of the establishment of SVO order in English; this is a syntactic relationship that awaits formalization.

In trying to account for the changes of word-order that languages undergo, many linguists are tempted by a foreign influence explanation. The IE languages of India are inhibited in their change from SOV to SVO by close contact with the SOV Dravidian languages. Tocharian, too, seems to undergo a dramatic change from incipient SVO structure with inflectional suffixes inherited from PIE, to SOV structure with agglutinative suffixes; Lehmann (1973) attributes this to borrowing. The Finno-Ugric family is SOV, but Finnish and Estonian innovate SVO

word-order and some inflectional rather than agglutinative features, apparently because of contact with IE languages. Old Norse, on the other hand, seems to undergo a peculiar loss of prefixation, for which there are no phonological reasons, and this occurs rather late (around the first half of the ninth century), so it cannot be an archaism. Lehmann (1973) attributes this to contact with languages of the Finno-Ugric group, from which Old Norse is to borrow some ordering rules (e.g. for the genitive) and syntactic patterns for postpositions and suffixes. Thus Finnish and Old Norse impose their own features on each other. Munda, an Austro-Asian language, is originally VO and non-agglutinating, like its cognate Khmer-Nicobar (spoken in southeast Asia). However, speakers of Munda go to India in the first and second millenia B.C., and their language shifts to the agglutinating OV type, because of the influence of the Dravidian languages. Proto-Amharic is VO, and it shifts to OV because of contact with the Cushitic languages of Ethiopia.

Now the phenomenon of borrowing is among the most popular explanations for any kind of linguistic change to be found in the literature. In fact, most of the features which are interrelated in this study as harmonious with certain structures, have been attributed by some linguist at some time to the random influence of borrowing. This explanation is by no means an outdated one; Lockwood (1969) considers the PGmc periphrastic verbs an imitation of Romance developments, and the reduction of the PIE tense system to past and preterite due to Finno-Ugric influence. Traugott (1972) does not discount the influence of French and Scandinavian upon the disappearance of grammatical gender in English. Invocations of foreign influence are innumerable. However, the only role of foreign influence which is well-attested is its tendency to accelerate changes which are already underway in a language. The breakdown of the OE inflectional system, for example, is underway from the earliest records. But it proceeds most rapidly in the North and Midlands, undoubtedly because of the extensive bilingualism there with Scandinavian dialects. Many innovations begin in this area, although they share no specific features with the language of the invaders. Similarly, the morphology of Persian is drastically levelled during the Moslem conquest.

Unless it can be shown that the word-order changes described above are immanent in languages, and are thus accelerated, rather than caused, by contact with other languages, the foreign influence explanation ought to be a very last resort. It was not imagined fifteen years ago that a verb-final language has structural reasons for requiring postpositions rather than prepositions; perhaps further research will reveal that phenomena which cannot now be accounted for without recourse to a foreign influence explanation are likewise engendered by the internal structure of the language

itself. Besides, what determines whether Finnish is to borrow word-order from Old Norse, and not the patterns of affixation that Old Norse supposedly borrows from Finnish?

This study, in fact, uncovers more unanswered questions than it does answers. The ultimate causes of word-order change remain obscure; it is unclear why New High German should begin to innovate SOV characteristics rather than continue to develop along the lines of early Middle English towards an SVO type. Is the contact with Latin verb-final order via translation in the second half of the fifteenth century, combined with the retained SOV features of Middle High German, sufficient to set off a regressive movement? Why should PIE apparently never fully consolidate SOV order?

A more fruitful area for research is the interrelationship among the various characteristics of a certain word-order type. In particular, it is unclear whether the position of the verb exerts a diachronic influence upon the order of the other constituents. That it does is suggested by the evidence of New High German, in which the fixing of clause-final order in dependent clauses and of all non-finite parts of the verb in main clauses, seems to precede the rise of postpositions and the preposing of participial constructions. In Vennemann's (1973) analysis, the change of verb position is brought about early in the typological shift from SOV to SVO; it is necessitated by the breakdown of the subject/object morphology (which in turn occurs very early in the case-weakening process). The position of the verb then brings about all related changes. However, examples abound of languages innovating diverse features of the SVO type before the verb is fixed in second position. Postpositions are replaced by prepositions in Latin and Greek long before the shift of the verb to second position. Similarly, Miller indicates that conjunctions begin to be preposed rather than postposed in the early Indo-Iranian dialects, and that various other SVO features are innovated, and yet the surface order SVO is never established at all (presumably because of contact with the Dravidian languages). Furthermore, the subject/object distinction is often retained intact throughout the shift from SOV to SVO word-order, as in Greek. If it is not the underlying order of the subject, object and verb that causes the early IE dialects to innovate SVO features like prepositions and conjunctions on the left, then why do such innovations occur? Does a change in any part of the base component (e.g. NP + Adverbial Prt > Preposition + NP) suffice to bring about a change of order in the other base rules, so that eventually VP → V + NP is changed to VP → NP + V? Kuno's work does not suggest an answer to this diachronic question; centre-embedding is not guaranteed more by the clause-final position of the verb than by, say, the postposing of relative clauses in a verb-final language. It is only the combination of the two that leads to centre-embedding.

I have also left unexplained the relation between unstressed subject pronouns, articles and auxiliaries and the rise of SVO order. There is some evidence that the auxiliary moves to clause-second position before the MV (cf. German and OE; one study (Funke) indicates that the auxiliary can never occur in final position in a main clause in OE). Some reconciliation with the principle of weight might be accomplished. Vennemann (1974) and Miller discuss the raison d'être of the definite article, Vennemann arguing that topicalization problems arise during the breakdown of the subject/object morphology, and Miller countering that Greek develops an article when this morphology is still intact. I leave unexplained and unformalized the shift from impersonal to personal use of verbs, and of intransitive to transitive, that is so well-attested in the development of the European languages. What is the precise relation between inflectional systems and word-order types; why should case, number and gender features become prefixed rather than suffixed to nouns (cf. Latin regis, regi, regem, reges 'of-the-king, to-the-king, the-king (acc.), the kings' and French du roi, au roi, le roi, les rois (this -s not being represented phonetically)) in the shift from SOV to SVO? When the morphological and scrambling rules of a language are lost, where exactly is the simultaneous increase in complexity?

Lehmann (1973) suggests a correlation between word-order type and phonological structure. The syllabic structure of OV languages is often (C)CV (as in Japanese; in Turkish, a syllable-final consonant must be a single resonant). A VO language, which is inflectional rather than agglutinating, tends to have closed syllables, and consonant clusters are as frequent here syllable-finally as syllable-initially. Vowel harmony is characteristic of OV languages, he says (cf. Turkish, Finno-Ugric); the assimilation process, like deletion rules and the ordering of adverbs and objects, operates from right to left. In VO languages, on the other hand, assimilation supposedly operates from left to right (cf. Umlaut; if this is true, then this is another aspect in which French is more consistently SVO than English; since in French assimilation is usually progressive rather than regressive: absorbe [apsorb] vs. English [abzorb]). Finally, OV languages often have an accent of pitch (cf. Japanese, PIE), which varies the quality rather than the quantity of vowels, while VO languages tend to have an accent of stress. If these correlations hold, they remain to be explained.

However, an explanation has been offered for the phenomenon of syntactic drift, an explanation which is superior to that of the erosive power of phonological change and to the postulation of a metacondition responsible for the proliferation of free-standing segments rather than bound morphemes in the surface structure. It has been demonstrated in this study that the independent but parallel developments which take place in related languages are due to struc-

tural features of the proto-language. Meillet (1917) is thus mistaken in his belief that the principles of change which are active before, during and after they are manifested in various linguistic developments can be only acknowledged by the linguist, and not explained (p.9). It is also clear that, while word-order change is not the sole cause of syntactic changes, it can be called upon to relate many diachronic developments which have until now defied explanation.

Notes

1. This work was partially supported by Canada Council Grant No. S73-1570, Diachronic Syntax and Constraints on Grammars. I am grateful to the unstinting David Lightfoot for his many kinds of help.

2. She states the opposite, though, in 1972: "Surface nominal function is primarily indicated by case in Old English. Other factors are, however, also important, notably word-order and the use of prepositions" (p.80).

3. This is in keeping with a principle of Greenberg's, that the higher a construction in a phrase marker, the freer the order of the constituent elements (p.104). The order within a morphological construction is the most fixed of all.

4. Pronouns retain an old mode of comparison in Latin, and reflect earlier object - verb order in French and Bantu, as will be seen below.

5. The dual role of these particles is reflected in the ambiguity of John decided on the boat, John was working on the stage.

6. Germanists speak of three different levels in German: Schriftsprache 'literary language', Umgangssprache 'colloquial language', and Mundarten 'dialects'.

7. This article, "On 'Gapping and the Order of Constituents'", in Quarterly Progress Report No. 97, MIT, is unavailable to me. I read of it in Smith, p.19f..

8. This, too, is from Smith, p.18.

9. Cf. Greenberg's Universal 39: Where morphemes of both number

and case are present and both follow or both precede the noun base, the expression of number almost always comes between the noun base and the expression of case.

10. The 1967 article is "Deep and Surface Structure in Alfredian Prose", PEGS paper No. 14, partial prepublication draft, Washington, D.C. It is unavailable to me; I read of it in Smith, p.56.

11. David Lightfoot has pointed out to me that the view of German and OE as underlying SOV languages, with a transformation moving the verb to second position in independent clauses, is consistent with Emonds' (e.g. 1972) constraints upon transformations. If a transformation may only move an element into a position where it is immediately dominated by the highest S (being a 'root' transformation), or where it may be generated by a phrase structure rule (being a 'structure-preserving' transformation), then no transformation may be postulated for German and OE which moves the verb to clause-final position in subordinate clauses.

12. There is the same tendency in English for the comparative and superlative to be formed analytically in monosyllabic and bisyllabic words, where this was formerly not the case: compare Milton's elegantest and sheepishest with modern most plain, most cruel, most simple.

13. The relevant works are unavailable to me; I read of them in Smith, p.5, 52: Fourquet's L'Ordre des éléments de la phrase en germanique ancien, University of Strasbourg, 1938; Kuhn's "Zur Wortstellung im Altgermanischen", Paul und Braune Beitraege, Vol.57, p.1-109 (1892); Braune's "Zur Lehre von der deutschen Wortstellung", Forschungen zur deutschen Philologie, Festgabe fuer Rudolf Hildebrand, Leipzig, p.34-51 (1894).

14. These works are unavailable to me. I read of them in Lehmann (1969:9): "Preliminaries to a Historical and Comparative Analysis of the Syntax of the Old Irish Verb", Celtica VI, p.1-49 (1960); "Preliminaries to the Reconstruction of IE Sentence Structure", Proceedings of the Ninth International Congress of Linguists, The Hague, p.1035-42, 1045 (1964).

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